AN HBJ PUBLICATION

FEBRUARY 1986/$2.00

WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962

Top 50 landscape contractors

Tree & ornamental disease control guide

British turf

LAWNCARE
BY PROFESSIONALS

Service calls running you into the ground?

It could be your herbicide.

Lazy products may not control all the weeds they should. They may miss wild violet, for example, or spurge, oxalis, ground ivy . . . or something else your customers may have. And there's no surer invitation to a profit-robbing service call.

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In addition to its broad spectrum control, TURFLON D has proven to be extremely cost-effective. Lawn care operators who have used it find that it does in one or two treatments what other products fail to achieve in three applications a year. And its overall performance can mean a significant reduction in service callbacks . . . plus a marked improvement in customer retention.

TURFLON D herbicide. It could be just what you need, if service calls are running you into the ground. Talk to your distributor today.

TURFLON
Cuts costly callbacks.

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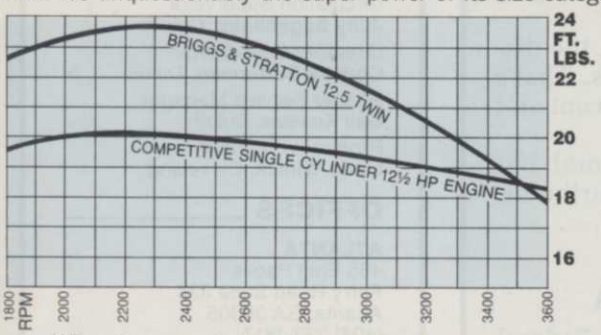
If a power curve is your measure of an engine, you don't have to look any further than the new Briggs & Stratton 12½ hp twin. It's unquestionably the super power of its size category.



When it comes to torque as well as smooth, quiet operation, it simply has no competition. In fact, there's really only one area of comparison. Price. You get all this extra at very little extra cost.

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Jerry Roche

Ken Kuhajda

Ron Hall

A fair price and a fair profit

■ In travels around the country our editors have heard turf managers say things like, "My distributor buys a new Cadillac every time I walk out his door after a purchase. His prices are killing me!"

We've also heard distributors say, "These turf managers beat me to within an inch of my life on price, and then they want service on top of it. I can't afford to do business at these prices."

The truth probably lies closer to the second statement, judging by a recent survey.

For every dollar of turf chemicals or equipment sold, the distributor walks away with only 2.2 cents—before taxes. That's tight. The survey also noted that gross profit is 26.8 percent and operating expense is 24.9 percent.

What's the moral of the story? Perhaps there is no moral, but one thing is for sure: if you expect service from your distributor, you have to expect him to make a fair profit on his sales.

Compromise needed for peace on FIFRA

■ According to a recent story in the New York *Times*, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)—stalled for 13 years—could be renewed soon as the chemical industry and environmental groups reach a "rare peace."

The agreement did not stipulate how underground water supplies are to be protected, but it provides for an EPA review of health and safety studies submitted to this point, and possible new restrictions. "It also calls," the *Times* story said, "for regulation of pesticide ingredients not now subject to review."

This sort of compromise is long overdue. To serve the best interests of all parties involved, both sides must continue to give inches while not trying to take miles.

Sports turf's brave new world

■ Who will be the first to grow turfgrass inside a domed stadium?

George Toma, chief groundsman for the Kansas City Chiefs, thinks quality turfgrass can be grown on portable pallets, then used as needed for a quality sports turf surface. New Jersey turfgrass expert Henry Indyk feels advances in lighting technology will allow turfgrass to be grown indoors. He says he will be around to see it. Dr. Kent Kurtz, turfgrass professor at Cal-Poly Pamona, maintains that "in the next five to ten years, domed stadiums are going to have natural grass growing in them." In Germany Dr. Max Losch designs, builds, and installs retractable roofs for sports halls. These facilities make money, England's SPORTS INDUSTRY reports.

Pieces to an intriguing puzzle. Who will be bold enough to profitably tie them together? Domed stadiums don't look too far away in Chicago and Cleveland.

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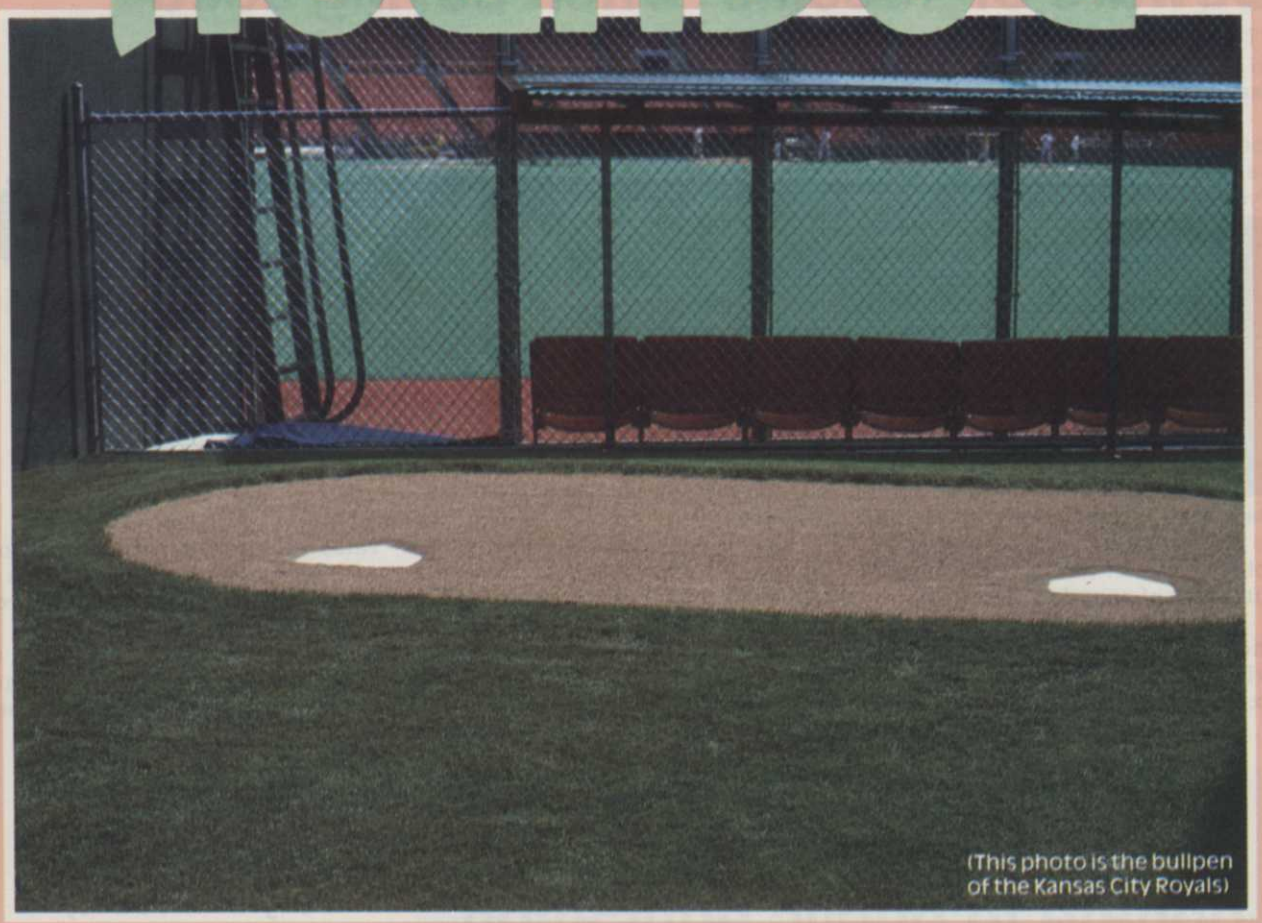

(This photo is the bullpen of the Kansas City Royals)

Is At Home In The Bullpen Of The Kansas City Royals

That's because the highly respected groundskeeper of the Royals, George Toma, knew that Houndog turf-type tall fescue would give him handsome, tough, tenacious, low maintenance turf.

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He'll tell you that Houndog is one of the leaders in the new generation of turf-type tall fescues which have earned a solid reputation for low maintenance qualities whether cut at 1½ or as high as three inches.

A prime choice for the upper South as well as the transition zone and Northern regions, Houndog holds its quality even during the heat and humidity of summer.

Houndog is very drought tolerant because it has the legendary deep root system of all tall fescues. Because it is a low maintenance variety it requires minimum fertilization.

Moderately low growing and leafy, Houndog approaches modern Kentucky bluegrasses in appearance and is generally considered the darkest green of the turf- type tall fescues.

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SEED

Beware of 'rascals' when buying seed

"There isn't such a thing as a bargain in seed," says the president of a turf seed testing firm in Marysville, Ohio.

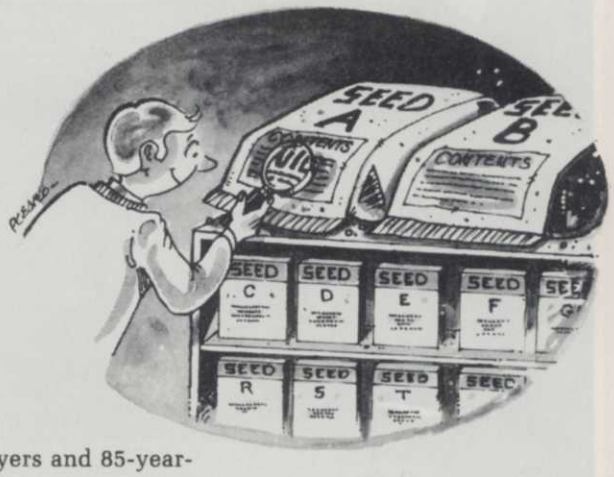
Dale Kern, of Seed Technology, Inc., warned participants in December's New Jersey Turfgrass Expo, "you get what you pay for."

Dale Kern

These warnings prefaced comments concerning the labeling of turf seed. That process, Kern explained, often involves the testing (under optimum germination conditions) of as little as one teaspoon's worth of seed per lot. The size of the lot could involve hundreds of pounds of seed.

There could be a wide variance in the quality and quantity of seed within a shipment of seed, he explained.

For instance, a pound of bluegrass seed could contain as many as 1,100,000 or as few as 800,000 seed. The same is true of other species. And, even though the germination rate, as displayed on the label, could be the same for different bags of the same variety, the resulting seedlings might be as different in vigor as "pro football players and 85-year-old men."



Says Kern, even though some companies exceed the law ensuring the quality of their product, "there are some rascals in the industry."

Kern told the turfgrass professionals they will obtain better results with lower seeding rates of high quality seed than by higher rates of inferior seed. He recommended commercial seed users insist on a 25-gram "all weed, all crop" check.

"They should say, 'I want to see everything that's in there.' There isn't a bargain basement in the seed industry," Kern said.

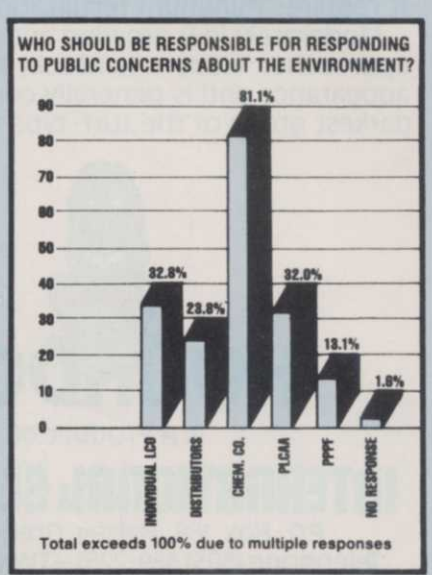
SURVEY

Lawn care operators would donate to public education

More than three-quarters of all lawn care operators would financially support a program to respond to public concerns about the use of chemicals, according to a survey conducted by Infometrics Research.

Of 120 total respondents, 91 said they would finance such a program.

As shown in the chart, most LCOs feel the chemical companies have responsibility for financing such programs; even though many also feel distributors, LCOs, and the Professional Lawn Care Association of America have a responsibility.



In conjunction with these findings, 91.1 percent said they would distribute additional consumer literature, and 87.8 percent felt such literature should be designed to minimize the fear of chemicals.

A 94.3 percent majority felt that LCOs should unite nationwide to address chemical trespass legislation.

Asked if sign-posting on treated properties should become a voluntary but standard practice, 66.9 percent said "no."

A 74 percent majority felt all lawn care technicians should be certified.

PESTICIDES

Posting law passed in Maryland county

Homeowners and "green industry" workmen must post signs prior to applying pesticides in Prince George's County, just outside Washington, D.C.

Late last year the county council, by a 7-2 vote, passed the posting law.

The measure requires anyone (excluding farmers) who applies to pesticides to post a sign visible from the street. Failure to comply will result in a $50 fine.

The council acted in spite of a ruling by Maryland Attorney General Stephen H. Sachs that local governments may not regulate the sale and use of pesticides. Those functions, he reported, are regulated by the Federal Insecticide, Fungicide and Rodenticide Act.

The law didn't generate undue enthusiasm from the county health department, where officials say enforcement may cost over $100,000 a year.

Mike Tidd, owner of a Lawn Doctor franchise in nearby Glenn Dale, was one of just a few to openly speak against the issue prior to the vote.

"We didn't have an alliance in there fighting and punching," Tidd tells WEEDS TREES & TURF. "It's emotional stuff and the county council bought it hook, line and sinker."

TREE SERVICE

Davey Tree donates truck and sprayer

Davey Tree, based in Kent, Ohio, has always had good luck hiring those who graduated from Hocking Technical College's tree care and timber harvesting program.

To show its appreciation, Davey recently donated a sprayer and truck to the Nelsonville, Ohio,-based technical school.

"Hocking has always turned out a high-quality trainee to the industry," says Davey area manager George Gaumer.

"We want to support their arboriculture program so they turn out an even higher-quality graduate," Gaumer tells WEEDS TREES & TURF.

Gaumer says the truck and sprayer will allow Hocking Tech to teach practical approaches to pest management and tree nutrition.

Hugh Morton, Hocking Tech director for forest industries training, tells WT&T that the truck is undergoing natural gas conversion and will run on either natural gas or gasoline.

Hocking Tech has its own natural gas wells in the rolling hills of southeastern Ohio.

The two-year, publicly-funded college offers 30 different areas of study to its 4,000 students. Almost a quarter of the students are in the natural resources department.

An associate degree of technical studies in tree care and timber harvesting includes an intensive 11-week program in tree care.

Hocking Technical College reps Hugh Morton (right), director of the Institute for Forest Industries Training, and arboriculture instructor Nelson Pierson (center) accept a truck and sprayer from Davey Tree vice-president/general manager/commercial services Don Shope.

HAZARDOUS WASTE

Georgia firm will haul small waste quantities

Got some hazardous waste you want to get rid of?

You may want to call St. Joseph Motor Lines of Atlanta.

St. Joseph will haul any amount of hazardous waste to an EPA-approved disposal site, in accordance to recently-enacted RCRA (Resource Conservation and Recovery Act) amendments regulating the Small Quantity Generator.

Eastwood

"We are the only carrier offering this transport service on a national basis," says Virginia Eastwood, manager of St. Joseph's hazardous waste division.

"We're trying to dispel the fear that complying (with the RCRA amendments) will cost so much that the small quantity generator will be out of business," she says.

Under new EPA/RCRA rules, anyone generating more than 220 lbs. of hazardous waste per month must dispose of the waste at an EPA-approved disposal site. The redefinition affects many lawn and landscape businesses.

St. Joseph charges by the 55-gallon drum. It prepares the proper manifests and label, and disposes drums.

"There's not a whole lot of choice out there," says Eastwood. Common carriers do not accept shipments of hazardous waste and hazardous waste private carriers generally accept only by the truckload.

"This will become the accepted practice for the small quantity generator," she says.

For information, call Eastwood at (404) 452-1744 or write 5724 New Peachtree Rd., Atlanta, GA 30341.

SPORTS TURF

Dr. Kurtz applauds turf's 'new breed' in Ohio Turfgrass Show Speech

"We have a new breed of person coming along," says Dr. Kent Kurtz of the sports turf segment of the green industry. "It's no longer 'five yards and a cloud of dust'...but we may still be as much as 70 years behind the golf course superintendents."

Kurtz, speaking at the Ohio Turfgrass Foundation conference, further noted that "the sports turf industry has never recovered from the 'wonder carpet.'" He did say, however, that some new developments could help athletic field managers narrow the gap. Specifically:

- geotextiles, which affect better drainage and warm frozen turf;
- pre-germination tactics for quicker growth;
- turf colorants for dormant turf;
- improved turfseed varieties; and
- sod anchoring for new sod.

"The athletic segment of the industry is just starting to blossom," claims Kurtz, who is executive director of the Sports Turf Managers Association.

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SUBDUE

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TURFGRASS

NFL bending injury data on fake turf?

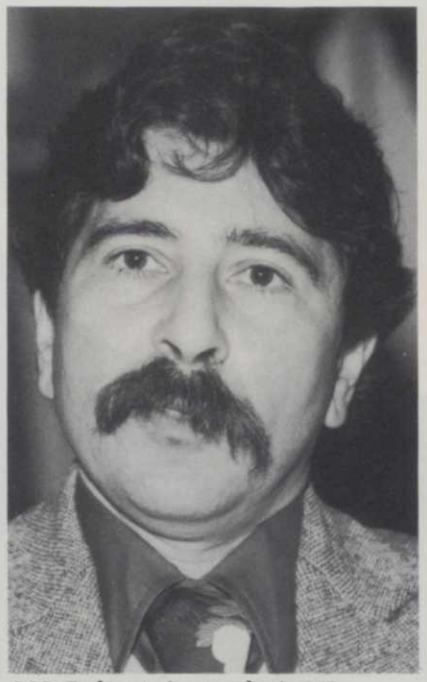
An official of the National Football League Players Association says team owners are taking "an ostrich approach" to professional football player injuries.

The reason? The "cosmetics" of synthetic turf surfaces, says M.J. Duberstein, research director for the NFL Players Association. He termed the NFL "a billion dollar a year entertainment industry."

Duberstein, who spoke at the New Jersey Turfgrass Expo in December, said: "artificial surfaces pose a major safety hazard for every NFL player."

He said the players association cemented its opposition to synthetic turf after comparing 1983 and '84 NFL injury figures from data supplied by league management. It showed an 18 percent increase in the number of injuries, Duberstein noted.

The Players Association spokesman attributed some of the increase to the move by the New York Jets and Indianapolis Colts from grass to artificial turf playing surfaces. The Colts injury rate doubled in '84 over '83. Leaguewide, the average number of injuries remained constant on grass, but went up 36 percent on synthetic, he said.



M.J. Duberstein speaks in NJ

This past season figures supplied by management showed a 25 percent decrease in the injury rate, but Duberstein accused league management of "distorting the injury statistics."

The NFL Player's Association, the player's union, is attempting to limit of the use of synthetic turf in professional football.

"How many more studies are needed?" Duberstein asked. "Artificial fields are as dangerous as always."

PESTICIDES

Prof: name change good for industry

Pesticides, why not call them "qualicides" or even "quanticides?"

Dr. William Becker, a veteran Florida agricultural safety specialist, posed this question at the Professional Lawn Care Association of America (PLCAA) Conference this past November.

Becker says the name itself, "pesticides," puts the Green Industry on the defensive.

"I sometimes wish the term

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The 32" and 36" units are equipped with either an 11 h.p. Briggs I/C engine or 11 h.p. Honda synchro-balanced engine. The 48" electric start engine has a 14 h.p. Briggs I/C engine and the 60" unit is equipped with an 18 h.p. electric start Briggs I/C engine.

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"This year my school supplies included a brand new John Deere 330 Diesel Lawn and Garden Tractor. I finally had to replace my old reliable John Deere that had carried me through many a semester of hard work.

"This new 330 sports a 16-hp liquid-cooled engine, a tough 3-cylinder diesel that operates really smooth and quiet. And it's mighty easy on the fuel in that big 4.5 gallon tank.

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"During the mowing season, a series of screens filter out grass clippings that can clog the radiator fins. And in the winter, high-energy glow plugs make for sure starts in the coldest weather. So you have year 'round reliability.

"By adding the new 330 Diesel Tractor to the already popular 430 Diesel, John Deere now has even more to offer. And either way... it's a real smart choice."

For the name of the nearest dealer, or a free folder on the entire line of John Deere Lawn and Garden tractors, call 800-447-9126 toll free (In Illinois, 800-322-6796) or write John Deere, Dept. 50, Moline, IL 61265.

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SHORTCUTS

HAPPY ANNIVERSARY..... This year marks two anniversaries for the Boy Scouts of America: 75th Diamond Jubilee and 55th year for its landscape architecture merit badge. Nearly 30,000 boys have earned the landscape architecture badge since its inception. Badge candidates—some as young as 11 years of age—must complete six requirements in areas like home grounds planning, topography, drainage, gardening, and plant study.

THE BIG TIME..... Trees were the subject of a recent news short in "Business Week" magazine. The brief article dealt with what homeowners should do to protect their property from possible damage by fallen trees and quoted Howard Eckel of The Davey Tree Expert Co., Kent, Ohio. (Davey, incidentally, publishes a free "Guide to Tree Beauty and Tree Care" booklet.)

MOLE CRICKETS BEWARE..... Mole crickets have been added to the Florida SLN label of Orthene 75S soluble powder insecticide for use on residential and commercial turf and golf courses. The label recommends a late afternoon or early evening application, after irrigation.

TRAINING AIDS..... Three turf-related organizations have announced new training aids. The New York Turfgrass Association has three 35mm slide sets available—one each on insects, diseases and weeds of turf. Each is $30 for members and $45 for nonmembers. Write them at 210 Cartwright Blvd., Massapequa Park, NY, 11762. The Professional Lawn Care Association is offering slide/cassette training programs on weed control and turf diseases. For more information, call executive vice-president Jim Brooks at (404) 977-5222. And OMC Lincoln has an 18-minute video tape featuring Dr. Robert Shearman from the University of Nebraska. "The Living Carpet," describes common causes, symptoms and treatment of thatch and compaction. Copies are available through dealers or by calling (800) 228-4444.

Dr. Robert Shearman

FOR CHAIN SAW DEVOTEES..... One-year limited warranties are now being provided on all professional chain saws being manufactured by Beaird-Poulan/Weed Eater. "We're the only manufacturer, domestic or foreign, who believes strongly enough in its professional chain saws to guarantee them for a full year," says product manager Walter Bennett. The company is the nation's largest manufacturer of chain saws.

ZOYSIA SPORTS TURF?..... Well-known research agronomist Jack Murray of the Beltsville (Md.) Agricultural Research Center has been doing a ton of research on slow-establishing zoysiagrass, a turf he feels has quite a future—as a sports turf. He says a zoysia-tall fescue blend (1-2 pounds tall fescue, to 1/2-1 pound zoysia) provides a good athletic turf. Murray also told the North Central Turfgrass Exposition audience that a synthetic zoysiagrass will be available in four to five years.

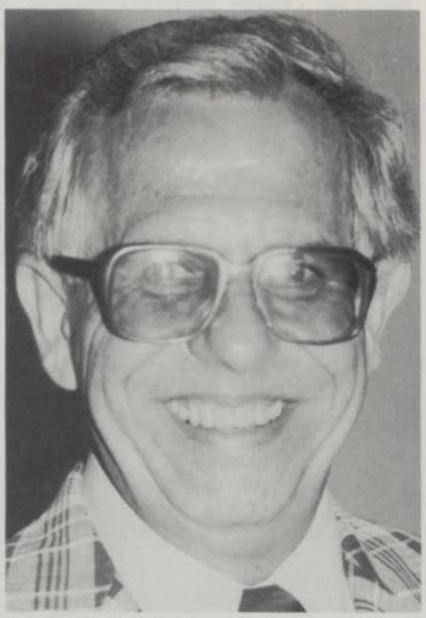
'pesticides' had never been coined," says Becker of the University of Florida. "Something like 'quanticides' and 'qualicides' would have been much more positive terms. Everyone wants quality products. And everyone wants these products in sufficient quantity to keep the price down."

Both, he insists, are by-products of the correct use of pesticides.

Semantics aside, Becker says pesticide users can be "their own worst enemies and fuel public concern that pesticides are bad."

His message: "We must put our house in order." And this for several specific reasons.

Credibility. The public perceives that pesticides are bad, that they contaminate our environment, poison



Dr. William Becker

our water and food supplies. Incidents like the contaminated watermelon scare in California this past summer damage credibility. Five pesticide-related deaths in Florida (two due to misuse, one to suicide, two in murder cases) attract national attention. he points out.

Also, the potential loss of pesticides for uses which they are now approved threatens green industry effectiveness. "We are losing nematocides in large quantities," Becker says. Meanwhile, manufacturers face higher costs of pesticide development, testing, approval, and marketing.

"The industry will continue to try to develop better pesticides where thousands of acres are going to be treated," Becker says. New products for smaller, specialized acreages are becoming increasingly scarce.

Becker warns, "there are enough

opportunities for pesticide problems and accidents" without the help of the green industry. "Too many of our competitors are cheating."

His advice: follow directions. They're on each pesticide label.

To prevent further restrictions on the use of pesticides, Becker outlines five steps.

- Use the right pesticide. Know your pest problem and know if a pesticide is needed. "Far too many pesticides are used because a problem 'may' develop. We fix far too many lawns which don't need fixing," he says.
- Storage. Give pesticides lock-and-key treatment. Only a few trusted employees should have access to them. Only reasonable quantities should be on hand. Inventory should be maintained. Storage should be fire proof, flood proof.
- Training. Becker emphasizes employees should be "trained, retrained, certified, licensed, and tattooed and branded as qualified pesticide mixers, loaders, and applicators."
- Transport. The tailgate of a pickup truck is a dangerous place to transport a hazardous product. Can an eight-year-old boy get into pesticides at a job site even after they've been safely delivered?
- Disposal. Pesticide users must join to lobby for and insist upon rational and reasonable solutions for the disposal of materials. Becker feels the improper disposal of chemicals is, perhaps, the public's greatest concern.

Says Becker: "Just as we have convinced our population that we cannot run our automobiles without gasoline, our homes without electricity, our daily lives without plastic, we must convince them that we cannot provide them with the quality and quantity of food and fiber—and attractive lawns—without pesticides."

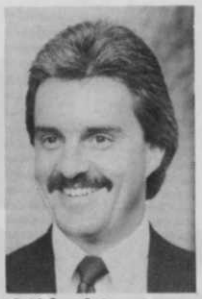
—Ron Hall

PEOPLE

HBJ promotes Kempner to associate publisher

Ron Kempner rises from national sales manager to associate publisher of WEEDS TREES & TURF. He has been with **HBJ Publications** for seven years. **Jon Miducki** joins WT&T as regional sales manager. Miducki was formerly regional sales manager for PEST CONTROL, another HBJ Publications magazine.

Kempner



Miducki

The Professional Grounds Management Society says **James B. Williamson** completed the Grounds Manager Certification Program. Williamson is president of Colorado Clean, Inc., Colorado Springs, Colo., and is the 14th person to complete the program since it began April 1980.

Nice 'N' Green Plant Foods, Romeoville, Ill., gets a new salesman, **Bret Rush**, formerly with Ernie's Fertilizer Services, Walton, Ind. The Purdue grad operated a lawn care business before that.

The California Landscape Contractors Association tabs **Roger D. Fiske** as its 1986 president. Fiske has been a member of that organization since 1962.

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LANDSCAPING'S ELITE

WEEDS TREES & TURF conducts its first survey of the top landscaping contracting companies in the country, and comes up with some amazing figures.

by Jerry Roche, editor

The Brickman Group, Ltd., of Long Grove, Ill. is the largest landscape contracting business in the nation.

Brickman, which is involved in residential, commercial, and industrial design/build and maintenance, tops the first WEEDS TREES & TURF survey of the top 50 landscaping companies.

"I think from our trade associations—ALCA, AAN, NLA and all those—it's pretty well recognized that between us and Environmental Industries, it's close," says Bruce Hunt of the Brickman Group. "Environmental Industries does a lot of hard construction, though, so they might have us beaten overall."

Both Brickman and Environmental Industries of Calabasas, Calif. (which did not return a survey form) have gross revenues nearly twice the amount of the No. 3 company, GMS Inc., of Houston, Tex.

Most of the big-money landscape business seems centered in warm-season areas: six of the top 10 on the list are based either in California or Texas. Overall, nine Texas and seven California businesses are listed in the Top 50. Georgia, another warm-season area, is the third most-mentioned state with five listings.

Members of WT&T's Top 50 boast average annual sales of $4,733,940 in landscape design, construction, design/build, and maintenance. Altogether, the Top 50 employ 7,110 workers during the peak season, an average of 142.2 per company. Year-round employment rosters total 4,292, or an average of 85.8 per company.

Furthermore, the average company on the Top 50 list has 2.4 branches and/or satellite offices, and was involved in

continued on page 24

WT&T TOP 50

Brickman Group, Ltd.
Langhorne, Pa.

Environmental Industries
Calabasas, Calif.

GMS Inc.
Houston, Tex.

Cagwin & Dorward Landscaping
Novato, Calif.

Hawkins Landscape
Dallas, Tex.

Lancaster Landscapes
Arlington, Va.

Davis Landscape Contractors
Harrisburg, Pa.

Las Colinas Landscape Services
Irving, Tex.

Landscape Design & Construction
Dallas, Tex.

SaBell's Inc.
Lakewood, Colo.

Gibbs Landscape
Smyrna, Ga.

Davis Landscape
Hilton Head Island, S.C.

Oregon Landscape Maintenance
Tigard, Ore.

DeLaurentis Construction
Mamaroneck, N.Y.

Earth Enterprises
Seattle, Wash.

Heyser Landscaping
Norristown, Pa.

Chapel Valley Landscaping
Woodbine, Md.

Alfred L. Simpson & Co.
Atlanta, Ga.

Clark-Morrell
Atlanta, Ga.

The Greenery
Hilton Head Island, S.C.

North Haven Gardens
Dallas, Tex.

Oak Brook Landscape
Oak Brook, Ill.

Larchwood Construction
Holtsville, N.Y.

R.B. Stout
Akron, Ohio

Lied's Nursery
Sussex, Wisc.

Edmund M. Hayden, Inc.
Woodstock, Ill.

Johnson Hydro Seeding
Rockville, Md.

The Ground Crew
Arlington, Tex.

J. Farmer & Co.
Middleton, Mass.

Ireland/Gannon Associates
East Norwich, N.Y.

JBK Landscape
Aurora, Colo.

Greentree Inc.
Stone Mountain, Ga.

Metroscape Corp.
Charlotte, N.C.

McDugald-Steele
Houston, Tex.

L&M Enterprises
Loveland, Colo.

continued on page 24

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Circle No. 168 on Reader Inquiry Card

ELITE, *from page 22*

161.9 design/build and 165.7 maintenance contracts in 1985.

Many of the nation's Top 50 landscape companies did not want specific figures made public. Here are the ones who granted us permission to use their statistics:

Lancaster Landscapes of Arlington, Va. sported gross revenues of $7.5 million in 1985 from its seven offices. The company, which handles 250 maintenance accounts, employs 425 peak-season workers and 250 year-rounders.

Davis Landscape Contractors of Harrisburg, Pa. had gross revenues of $7 million last year. The company has 180 peak-season and 120 year-round employees in its five offices. Davis is involved with 25 design/build clients and 30 landscape maintenance clients.

Las Colinas Landscape Services of Irving, Tex. also did $7 million worth of business on 225 maintenance contracts and 40 installation contracts. It employs 350 peak-season and 200 year-round at its one office.

SaBell's of Lakewood, Colo. was a third $7 million grosser from 50 design/build and 60 maintenance jobs. The company has 300 peak-season and 65 year-round employees.

Gibbs Landscape of Smyrna, Ga. keeps its 180 employees year-round to gross $6.6 million from two offices. The company is involved in 1,200 design/build jobs and 500 maintenance jobs.

Oregon Landscape Maintenance hauled in $6.5 million from its six offices. OLM has 230 maintenance and 25 design/build contracts, enough to keep 168 peak-season and 110 year-round employees busy.

DeLaurentis Construction, Mamaroneck, N.Y. grossed $6 million in 1985 from 17 major and numerous minor design/build projects. The company employs 160 during peak season and 50 year-round at its office.

Heyser Landscaping, with 116 contracting and 100 maintenance contracts in 1985, did $5 million worth of business. It has 165 peak-season and 65 year-round employees at its one office.

Alfred L. Simpson & Co. of Atlanta, Ga. keeps 110 of 140 employees on year-round, enabling it to do more than $4 million in 1985. One hundred ten maintenance contracts are serviced from its one office.

The Greenery of Hilton Head Island, S.C. did 315 maintenance and 120 design/build jobs in 1985 which resulted in $3.8 million in business. The company employs 95 year-round workers, adding 10 during peak season.

North Haven Gardens of Dallas, Tex. grossed $3.7 million, using 175 peak-season and 125 year-round employees in its office. The company serviced 20 design/build clients and 60 maintenance customers.

Oak Brook Landscape in Oak Brook, Ill. is a $3.5 million company, based on 90 maintenance contracts and 15 design/build jobs. It employs 24 year-round and 110 peak-season.

Larchwood Construction of Holtsville, N.Y. had 20 maintenance contracts result in more than $3.5 million in sales. It has 80-100 peak-season employees but only 12-15 year-round.

Lied's Nursery of Sussex, Wisc. grossed $3.5 million in 1985.

Edmund M. Hayden, Inc. of Woodstock, Ill. sported gross revenues of $3.2 million in 1985. The company was involved in seven design/build jobs and 10 maintenance jobs, using 13 year-round and 65 peak-season employees.

Johnson Hydro Seeding of Rockville, Md., with four franchises, installed 3,000 lawns and maintained 400 during 1985, good for $3.2 million in sales. The company employs 25 year-round employees and hires 55 more during the peak season.

The Ground Crew of Arlington, Tex. boasted $3.022 million in gross receipts from 242 maintenance contracts and 40 design/build jobs. It employs 88 during peak season and 41 all year at its two outlets.

J. Farmer of Middleton, Mass. also grossed $3 million on the strength of 20 design/build jobs. The company employs 12-14 all the time and 75-85 during its busy season.

JBK Landscape of Aurora, Colo. is also a $3 million grosser. It designed/built 30 landscapes and took care of 35 in 1985 with 75 peak-season and 30 year-round employees at its office.

Metroscape Corp. of Charlotte, N.C. was involved with $2.6 million worth of business that included 18 design/build jobs and 120 maintenance contracts. The firm, with two outlets, employs 35 all year and 64 during the busy season.

Greeno Inc. of Concord, Mass. used just six design/build jobs and five maintenance jobs to gross $2.5 million in 1985. The company has just eight year-round employees, but hired an additional 47 during the summer.

Bland Brothers did more than $2 million in business with just two design/build and three maintenance accounts. It too hired heavily in the summer: 56 additional employees to support a year-round staff of nine.

Land Design Group of Dallas, Tex. employed about 20-30 year-round and 35-40 peak-season workers to complete $2 million in business. The company constructed 35 landscapes and cared for 20 more.

Marvin's Garden & Landscape Service of Sarasota, Fla. also grossed $2 million. Its 40 employees at four offices are kept year-round to service seven maintenance contracts and design/build 13 landscapes.

Evergreen Services of Bellevue, Wash. has a headquarters and eight satellites that act as home base for 55-60 peak-season and 35-40 year-round employees.

Bregenzer's Inc. of Alpharetta, Ga. has gross revenues of $1.5 million in 1985, servicing 65 maintenance and 30 design/build clients. The company employs 35 year-rounders and adds 10 during the busy season at its office.

Arbor Heights Nursery of Webster, N.Y. hit the $3 million mark on the basis of 20 maintenance contracts and 300 design/build jobs. It employs 50 peak-season and 15 year-round workers.

EDITOR'S NOTE: This is WEEDS TREES & TURF's first attempt at listing the nation's top landscape companies. If we inadvertently left your company out, please write us at 7500 Old Oak Blvd., Cleveland, OH, 44130, and we'll be sure to include you on our 1987 list.

WT&T

WT&T TOP 50

TOP 50, *from page 22*

Contra Costa Landscaping
Martinez, Calif.

Greeno Inc.
Concord, Mass.

Plant Control Corp.
Irvine, Calif.

Starwood Nursery & Landscaping
Darlington and Myrtle Beach, S.C.

Bland Brothers
West Jordan, Utah

Industrial Landscape Services
San Jose, Calif.

Land Design Group
Dallas, Tex.

Cornelius Nurseries
Houston, Tex.

Marvin's Garden & Landscape Services
Sarasota, Calif.

L&L Maintenance
Santa Clara, Calif.

Evergreen Services Corp.
Bellevue, Wash.

Garden Gate Landscaping
Silver Spring, Md.

Surburban Landscape Associates
Davenport, Ia.

Bregenzer's Inc.
Alpharetta, Ga.

Arbor Heights Nursery
Webster, N.Y.

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IN CONTROL

At 28, Mark Yahn is writing a youthful success story as president of Ground Control Landscape & Maintenance. Orlando, Fla., is the right market.

by Ken Kuhajda, managing editor

Mark and Laurie Yahn, owners of Ground Control Landscape and Maintenance in Orlando, Fla.

Ed Phillips calls to me as he sees me walk out of Ground Control Landscaping and Maintenance in Orlando, Fla.

"Mr. Photographer," he says, seeing my camera but unaware of my name. "Why don't you come out back and get a few pictures. When all the trucks come in and all the equipment is lined up it's pretty impressive."

Phillips, Ground Control maintenance supervisor, takes great pride in "his" equipment and the fine shape it's in.

He's one of three maintenance supervisors ("I'm the senior supervisor," he says) at Ground Control, a seven-year-old gold mine in east Orlando.

As the crews return from their daily routines and the trucks and equipment are cleaned and lined up—indeed, an impressive sight and a daily event—I ask him if Ground Control's maintenance division is really that good.

A smile sneaks across his tan face. "There's no doubt about it—we're the best in the area," he says. "You can drive down the streets here in Orlando, the ones with the apartments on both sides, and you can tell the ones we do."

That pride seems typical of Ground Control employees, 110 in all. As Phillips calls instructions, he gets no dirty looks or sneers in return. They know their jobs, they *do* their jobs.

The clean-up continues as 15 or so Ground Control employees rub, shine, spray, and sharpen, readying the equipment for another day. Mechanics continually rebuild. They seem unaware of the stranger with the camera around his neck.

The front office

Meanwhile, back in the office, Ground Control's "administrators" wrap-up another day with an eye on tomorrow.

Most are named Yahn.

The head man is a Wheeling, W.Va., native, who moved to Orlando in 1970 when his father was transferred.

Mark Yahn is your average 28-year-old—with an above-average business. He drives a new Mercedes, his 25-year-old wife an Alfa Romeo.

His boat he keeps south of his Orlando home near Port St. Lucie. He and wife Laurie are in the process of moving into a new home in an upscale area northeast of Orlando.

His business, started in 1978 by Yahn and two friends, grossed $3.4 million in 1985.

This year, gross figures upwards of $3.5 to $4 million are expected. In Yahn's first full year (1979), he grossed $330,000.

He was 22 then. "From the beginning one of the keys was that we controlled our money," says Yahn. "We didn't split it three ways and spend it at the local bars. We put it back into the business."

Yahn and partners Frank Edwards and Alan Curran began in the sod business, getting the bulk of their work on referrals from Edwards' sister, who worked for American Sod, a local supplier.

In October 1978, one month after the corporation (yes, they incorporated from day one) was formed, they got a big break.

He took a ride

The story goes something like this: the sod trio was replacing turf and redoing the landscape for a woman in the River Run II housing development.

Down the street rolled the developer, Lester Zimmerman of the Greater Construction Company, in his Lincoln, ready to talk business.

Zimmerman asked the slightly-soiled Yahn if he wanted to take a ride. Perhaps to escape the Florida heat, Yahn consented.

Zimmerman informed the whiskerless Yahn that he needed a landscaper for the 100-plus homes he was developing in River Run III.

They arrived. "How much do you want to do this?" asked Zimmerman. Yahn didn't know. This was new to him. Zimmerman gave Yahn a couple days to get a bid together.

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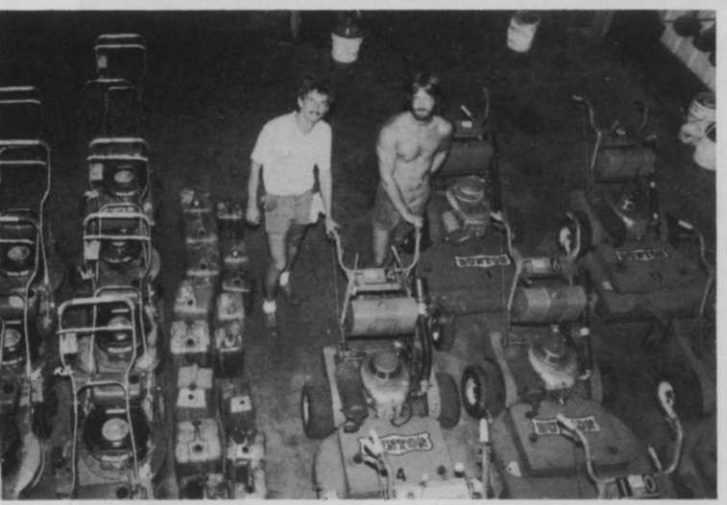

A profile of Ground Control. Top, the well-landscaped home base in Orlando. Left, maintenance supervisor Ed Phillips (left) and maintenance foreman Wayne Smith line up equipment at the end of the day. Right, employees Gary Stephenson and Shalom Simms get ready to call it a day.

Yahn arrived at a price.

Zimmerman accepted. "He told me that our price was a little more than what he had been paying but that I seemed honest," recalls Yahn.

Ground Control got the job—and the mess that came with it. The lots were in poor shape, some half completed and abandoned.

Somehow, Ground Control survived that first big job, leading to a long and prosperous relationship with Greater Construction.

It finally ended in the spring of 1984 when Yahn "started slipping," not giving Greater Construction the personal attention he always did.

"They were a major part of our business," says Yahn, noting that Greater Construction gave Ground Control $250,000 in business in 1982.

Smartly, Yahn had developed other resources and the loss of Greater Construction didn't crush his operation. By 1984, Ground Control had established itself as one of Orlando's biggest and best landscaping and maintenance companies.

And now there's one

Of the original partners, only Yahn

continued on page 30

Introducing

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Circle No. 103 on Reader Inquiry Card

Mark Yahn: growing up with Ground Control

Mike Guthrie, Ground Control maintenance administrator.

Take your average 28-year-old. A bit wild still, a bit emotional, perhaps, a little flighty. And certainly almost always right.

Now take your average 28-year-old and put him at the head of a multi-million dollar business and what do you get? Someone a bit wild, emotional, and flighty, who almost always thinks he's right, running a multi-million dollar business. Right?

Well, maybe. At 28, Mark Yahn runs Ground Control, probably exhibiting some of those 28-year-old traits. Like most young men, he's emotional, maybe too much so. He admits: "I'm very emotional with my business. I take my business very personally. I get excited when we get the big job and take it real personally when we just miss the big job."

He has weaknesses and strengths. He's taken time to analyze his traits and use the "data" to his advantage.

According to Mark Yahn, he excels at:

- Marketing. "I know what we are and I know how to tell people what we are."
- Delegating authority. "Some people call it lazy, I call it delegating authority.";
- Planning future growth. "Our growth projections have been fairly accurate."

He lacks in these areas:

- On-site instructions. "I don't do real well with in-depth instructions to the workers. I'm not good at handling the on-site labor force."
- Accounting. "My accounting abilities—there's not a lot of talent there. That's where (wife) Laurie complements me."
- Technical knowledge. "I don't have much technical knowledge on the irrigation end. That's where my dad (John Yahn, head of irrigation) comes in."

Similarly, the landscape business has its advantages and disadvantages.

Among the advantages Yahn cites are: 1) challenge ("making the machinery run smoothly."); 2) freedom of movement; 3) financial possibilities; 4) direct results attainable from the work; 5) variety of people you meet.

Yahn's list of disadvantages: 1) disappointments ("losing the big job."); 2) quality and quantity of employees; 3) financial risk ("the sheer risk of being in business."); 4) level of competition; 5) the need to be so heavily equipped.

—Ken Kuhajda

remains. Edwards left in 1979, Curran late in 1985. It's Mark Yahn's show with the capable help of office manager/wife Laurie, bookkeeper/mom Mary, and irrigation specialist/dad John.

Along with Mike Guthrie (maintenance administrator) and Jeff Deyo (construction administrator) they form Ground Control's management base.

Landscape construction accounts for 25 percent of gross revenues, maintenance 60 percent, and irrigation 15 percent.

'We have to improve the professionalism in our industry. That means fulfilling your end of the contract.'

—Yahn

Landscape architect Stephen G. Pategas, hired in December 1984, has helped the growth of the construction division, giving Ground Control design expertise it once had to hire from the outside.

Yahn's quick to credit the Orlando area for his success. Steady growth continues with a parallel growth in multi-family and commercial structures.

Maintenance/landscape firms are warring for the business. "You think this is a highly-competitive area until you go to an ALCA conference and everyone has the same problem. It doesn't seem as bad," says Yahn.

But that one low-baller or semi-professional is a risk to the industry, says Yahn.

"We have to improve the professionalism in our industry. That means fulfilling your end of the contract—by using high-quality materials, for example," says Yahn.

"And at the same time the owner needs to be sincere in his bidding and needs to qualify his contract to eliminate the non-professional," he says.

The real key

Mark Yahn pauses. He's asked what is the one ingredient needed for a successful maintenance/landscape business.

Another pause, a rarity for the glib businessman. "I guess getting on an architect's bid list. That's it in a nutshell. Everytime you turn around a new job comes up."

In 1986, Yahn may think twice before bidding the new jobs. He calls 1986 a "critical year."

"We're not going to grow as much this year and that's on purpose. We need to slow down a little bit and not relax on any job. We don't want to get reckless," he says.

The maintenance division, which accounted for almost all the $1.1 million in gross revenues in 1982, has slowed somewhat, as landscape construction and irrigation have taken off.

Despite maintenance's slowdown, Ground Control has grown, leading one to conclude that there is a bullish market to be tapped in Orlando for the construction and irrigation divisions.

Talk of millions of dollars doesn't awe the 28-year-old. For like his company's name, Mark Yahn has his feet completely on the ground. **WT&T**

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The grass machine.

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David Frank points out the area where a new office addition will be located.

STRAIGHT SHOOTER

David J. Frank Landscape Contracting isn't among the top 50 landscape companies in the country—yet. But, with 60 percent annual growth, it might show up on the list soon.

by Jerry Roche, editor

In 1959, when David J. Frank was 10 years old, he started a lawn and garden service. Seven of the original clients are with him today.

In 1970, when David J. Frank was a junior in college, he was making more than $20,000 a year in the landscaping business.

January 1, 1986, David J. Frank became president of the Milwaukee Chapter of the Wisconsin Landscape Contractors Association.

Today, his company—David J. Frank Landscape Contracting of Germantown, Wis.—has 19 crews and is growing at a 60 percent per annum clip.

You should have figured out by now that David J. Frank is not your prototypical entrepreneur.

Slim, bespectacled and dapper, Frank is also a self-proclaimed straight-shooter...from the hip.

"When I started, I was exactly the kind of thorn-in-the-side business that I now sit around and complain about," Frank states frankly. "But in November of 1976, I went to my first ALCA (Associated Landscape Contractors of America) Landscape Maintenance Division conference in Lincolnshire, Ill. That meeting blew me away. It really opened my eyes.

"Today, I can trace most of my business progress through things I learned from ALCA."

His company has evolved with the industry.

"One of the most exciting changes is that professionalism is improving," Frank notes. "Years ago, I used to get discouraged because the consumer had so little esteem of the intricacies of landscape contracting. That has changed, and the contractors and professional organizations have changed it. What the industry's doing, clients like."

Roots of success

The roots of Frank's success are deep.

"I was brought up in a middle-class family with a real work ethic," he says. And by the time he was in high school, the people around David J. Frank knew that work ethic would serve him well.

Upon his election as senior class president, Frank decided to operate the resources at his disposal like a business. The outcome was predictable.

Four more reasons to use the Toro 570 spray series.

Introducing four more great reasons to choose Toro. These new additions to the 570 spray head series offer you added flexibility while solving some of your toughest spray head problems.

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Having difficulty with high pressure causing spray heads to fog and reduce spray? Toro's unique new Pressure Compensating Nozzle (PCN™) will eliminate it. It is designed to correct pressure changes caused by differences in terrain elevation or high friction loss in long lateral lines.

Pressure compensation is also available for spray nozzles with our new Pressure Compensation Device (PCD™). The PCD can be purchased separately and installs easily into any of five 570 nozzles.

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Toro's new adjustable Stream Bubbler Nozzles let your customers take advantage of all the 570 pop-up features. Like in-ground installation for safety. And retraction when it's not in use for a better-looking landscape.

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Toro's new 570 Check Valve minimizes low head drainage. Ideal for use at the bottom of a slope, it checks up to seven feet of elevation to prevent puddling after the system is turned off. It also helps prevent debris from being drawn into the sprinkler in low-lying areas.

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Our Micro Spray Adapter lets you install a micro-spray nozzle into the sprinkler head for providing a finer mist over a much smaller area. Which makes it ideal for flowers and other delicate plants. With it, pop-ups can perform much more efficiently at lower pressures than large, higher pressure nozzles which have been throttled back. The Micro Spray Adapter fits all 570 sprinkler bodies, risers and extenders.

So for your next installation, remember these great 570 problem solvers. They're four more reasons to choose the Toro 570 spray head series.

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"Our net income was $25,000," he remembers, a big smile crossing his face now. "All those Dominican nuns couldn't believe it when we handed them the money at the end of the year.

"I've always kind of had a take-charge attitude. Four or five years ago, I realized I couldn't work for somebody. I'm afraid I wouldn't be a very good employee."

But he's not always been a good employer either.

"Because of my high standards," he admits, "I used to be an SOB at times. For years, my standards were way up here. Entry level people have standards, too, but there was just such a chasm. I had unrealistic expectations."

Turnover rates low

He has survived that challenge just as he survived some lean early years back in 1972. This last year, turnover at the important crew leader level was zero; a few years ago, it might have been 50 to 60 percent.

"I'm involving more people in decision-making now," Frank says. "I don't shove things down their throat any more. If people make decisions by themselves, they're motivated to carry the plan out."

The company has two vice-presidents: Mike Frank, David's brother, for the landscape construction division and Robert Heldt for the management department.

Frank himself likes to divide the business another way, though: into what he considers its three most important components—hiring, training, and managing personnel.

"First of all, you need the right person for the right job, and that's a big job in itself that consists of recruiting, interviewing, and selecting.

"Then there's training. If you want to teach effectively, your employees need to *see, hear, write, discuss, and experience.*

"Managing and motivating is the third thing: how you keep people on track and how you let them know they're a winner."

To that end, Frank recently established a new position: senior crew leader with a pay scale 50 percent higher than that of crew leader.

"One of the classic mistakes is taking the best crew leader and making him a supervisor. Some don't do well at all," Frank explains. "The senior crew leader position is for people who want a career path in horticulture. We have one, Ken Plumb, who's been in the industry 16 years. He's a poet on a grading tractor."

Frank says that the position is not granted, but earned, based on three factors:

- costing consistently under budget;
- complaints and callbacks low or zero; and
- mastery of 70 percent of the skills in the job description.

"You should see the productivity of somebody like that," he claims.

Expansion

As you might expect, Frank sees a bountiful future for his company. As a matter of fact, he is expanding his physical facilities this winter with the addition of one building (new total will be three) and 5,400 sq. ft. (new total will be 18,000 sq. ft.).

'One of the classic mistakes is taking the best crew leader and making him a supervisor. Some don't do well at all.'

—Frank

"The new facility will include a training center that seats 125 employees," Frank says. "We've spent the last couple of years getting our people resources in place. Now it's time to expand our facilities."

But he doesn't want to give away long-term plans. In one breath he says that there will be no branch expansion. "Despite the growth, my managers and I are clearly not doing as good a job as we could...so why consider branches?...we don't want to expand in errors and mistakes!"

Then, later in the conversation, he contradicts himself: "In the next 10 to 20 years, we're going to see some exciting things happen like the emergence of more regional landscape management firms...I want to make sure my company is part of that."

It will be, if past success is any indication. **WT&T**

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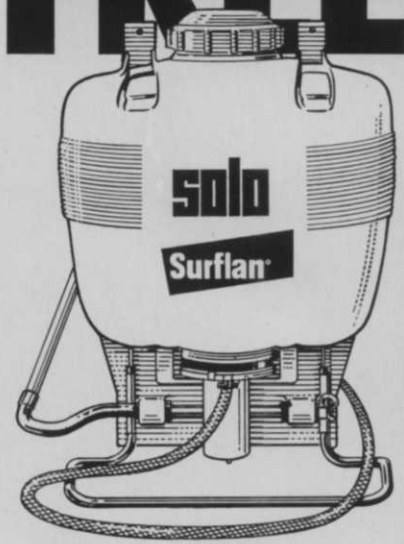

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Over-the-top picture-perfect weed control.

A GOLD MEDALIST

Award-winning Chapel Valley Landscape Company of Woodbine, Md., continues to gather the accolades. Owner Landon Reeve thinks that's great but not as great as a satisfied client.

Ken Kuhajda, managing editor

Landon Reeve could probably wallpaper his entire office with awards earned by his Chapel Valley Landscape Company.

Those walls do support plaques and certificates earned since the company's birth in 1968. Chapel Valley is *that* good.

Those in the industry realize Chapel Valley is one of the finest landscaping companies in the Eastern United States.

Awards are more than wallpaper, says company owner Reeve, but he doesn't enter competition for himself. He does it for the clients.

"I don't count them," he says, genuine modesty surfacing. "When we feel we have quality jobs, we enter them, not only for the recognition of the employees and our company—more for the recognition of the client."

Some of those clients? Mobil Oil headquarters, Johns Hopkins Hospital, Baltimore Hyatt, Martin Marietta headquarters, and a wheelbarrow-full of others.

Baltimore, Washington D.C., or northern Virginia, you'll find Chapel Valley Landscape crews improving the landscape.

37 acres

If you're heading west of Baltimore and you're hungry, it's a good idea to stop on Baltimore's western fringe. If you continue out I-70 West, you

Three of Chapel Valley Landscaping Company's showcase award-winners, counterclockwise from top: a condominium project in Bethesda, Md. that features a courtyard over the top of a parking garage; Duke Street Metro Office Building, a leased office building; and Martin/Marietta Corporate Headquarters in Bethesda.

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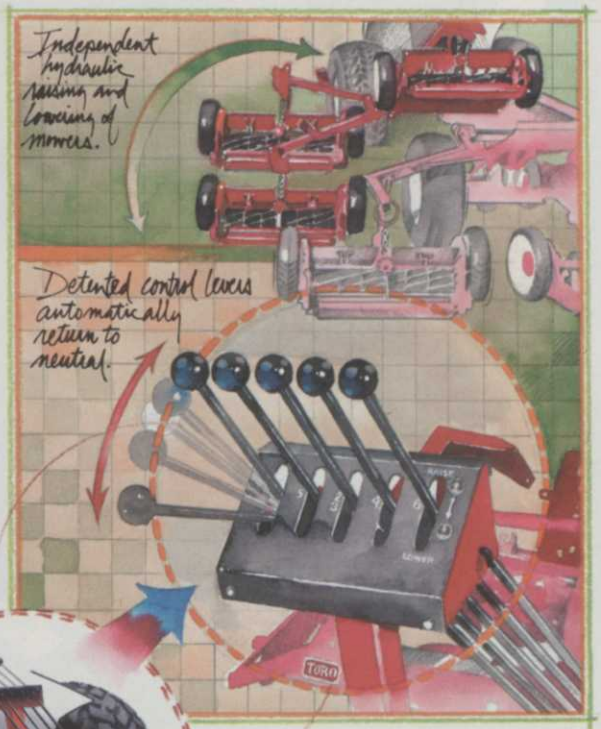

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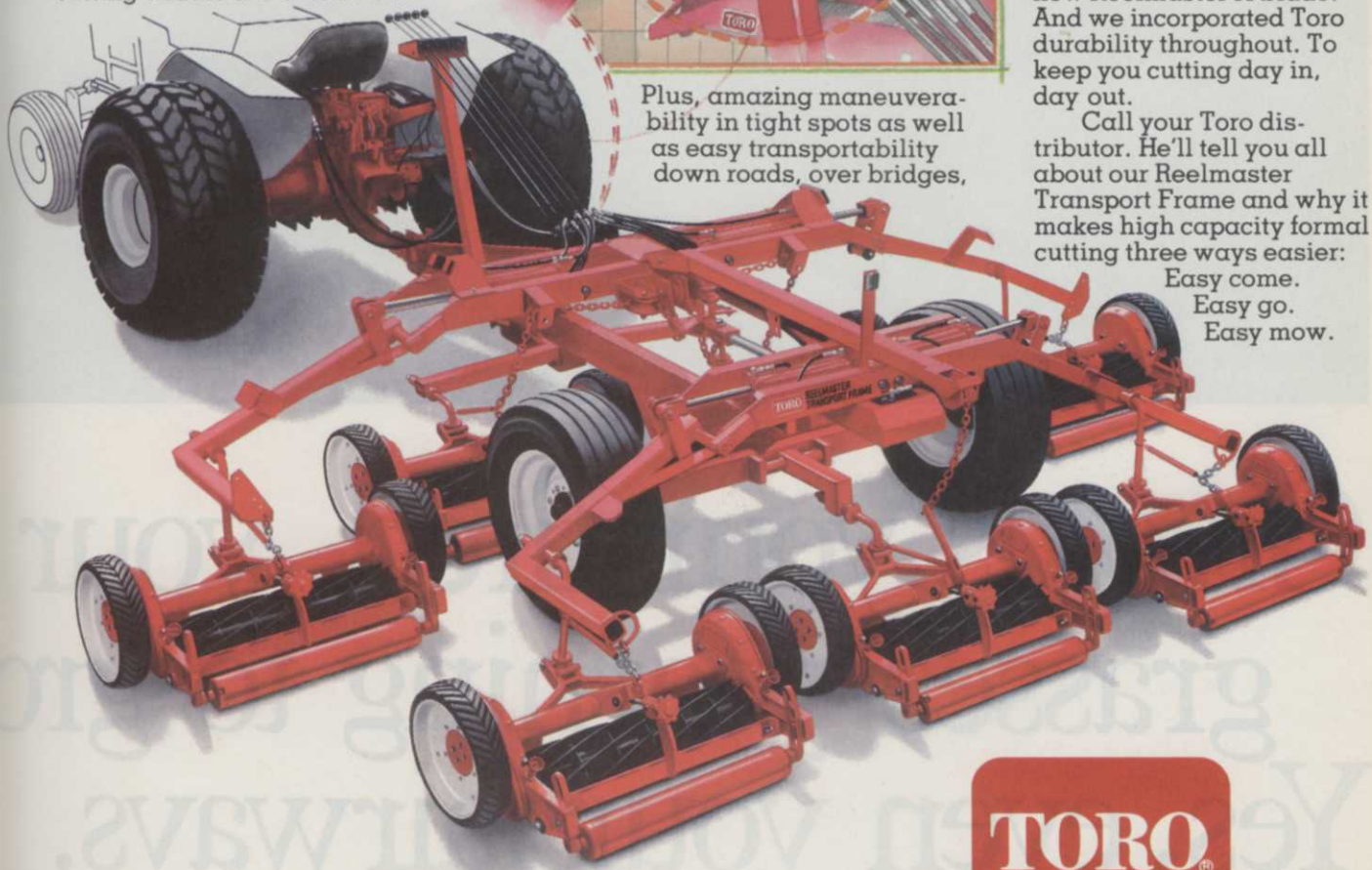

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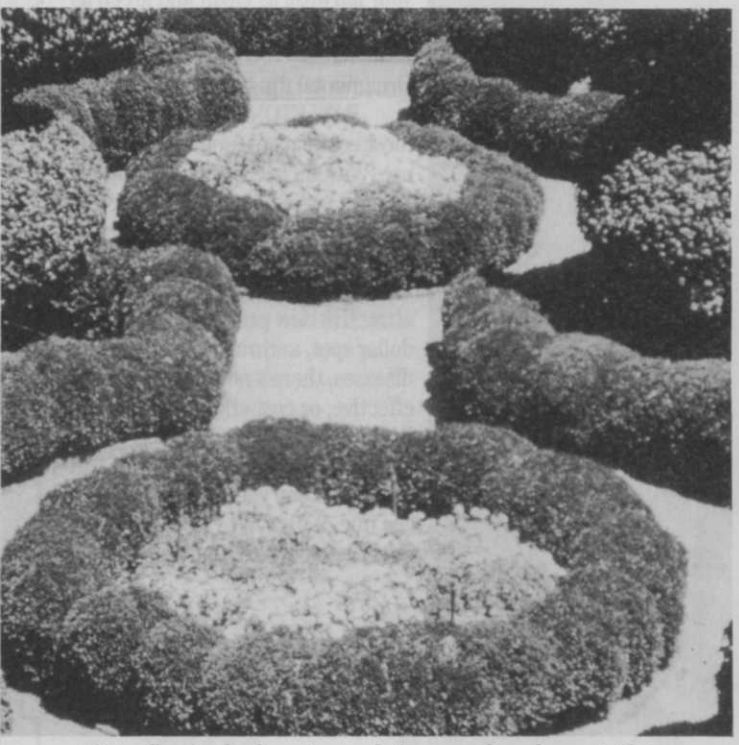

Two flower beds set on white gravel make a striking setting.

Landon Reeve, the brains behind the success of Chapel Valley Landscaping.

won't find much.

Baltimore doesn't have many suburbs that way.

For 20 miles along I-70, cows and silos dominate the landscape. It's farm country, it's serene.

On a 37-acre plot of land amid this tranquility sits Chapel Valley.

Six acres are developed; the nursery takes up 10.

That gives 100 or so peak-season employees room to roam. Reeve gives them the figurative room. "In this industry, people are number one in importance. If you have the right people, you can do anything," he says. "I can buy 50 trucks tomorrow but couldn't buy 50 good employees."

Most Chapel Valley field people work four 10-hour days. Reeve pays them well. He gets results.

"Our staff is excellent," he says. Unemployment is an obscene two to three percent in the Baltimore-Washington area. Reeve admits he can't fill all his positions. But he's been lucky over the last 17 years. "In our industry, the number one problem, as always, is people," he says.

A first-class area

Although there's a manpower shortage in the Baltimore-Washington area, there's no shortage of development.

Commercial construction, Chapel Valley's niche, runs unabated. Competition between Baltimore and Washington for that corporate dollar is at an all-time high.

Similarly, competition among landscape firms is heavy. Chapel Valley has changed to keep pace.

In the last year-and-a-half, Chapel Valley has computerized its buying, billing, and marketing functions.

'My goal has always been to do a quality job and let the result of that dictate the size we will be.'

—Reeve

The landscape installation division, the company's strength, has been streamlined. Landscape manager Dan Tamminga supervises two regional managers, each with his own territory.

Each manager oversees specific projects, maintaining close contact with field foremen. Reeve says the structure has worked, providing efficient construction methods. Landscape workers total 35, with five crews of six.

Another change is the success of the maintenance department, formed just five years ago.

Maintenance manager Rich Grigalus oversees eight crews and 27 employees.

The workers further their educations by attending horticulture training seminars. Five have pesticide licenses.

Chapel Valley has maintenance field offices in Bethesda, Md., and northern Virginia. The company makes an effort to hire those in the local work force.

Another asset is a growing landscape design department that now includes five landscape architects.

Just a day off

When the pieces of Chapel Valley interlock, gross revenues total almost $5 million. Back in 1968, Landon Reeve only wanted to work less than a seven-day week. He didn't dream of heading a multi-million dollar corporation.

"We've become a little larger than

Frank J. McDonald, Director of Marketing
Cushman Division, Outboard Marine Corporation
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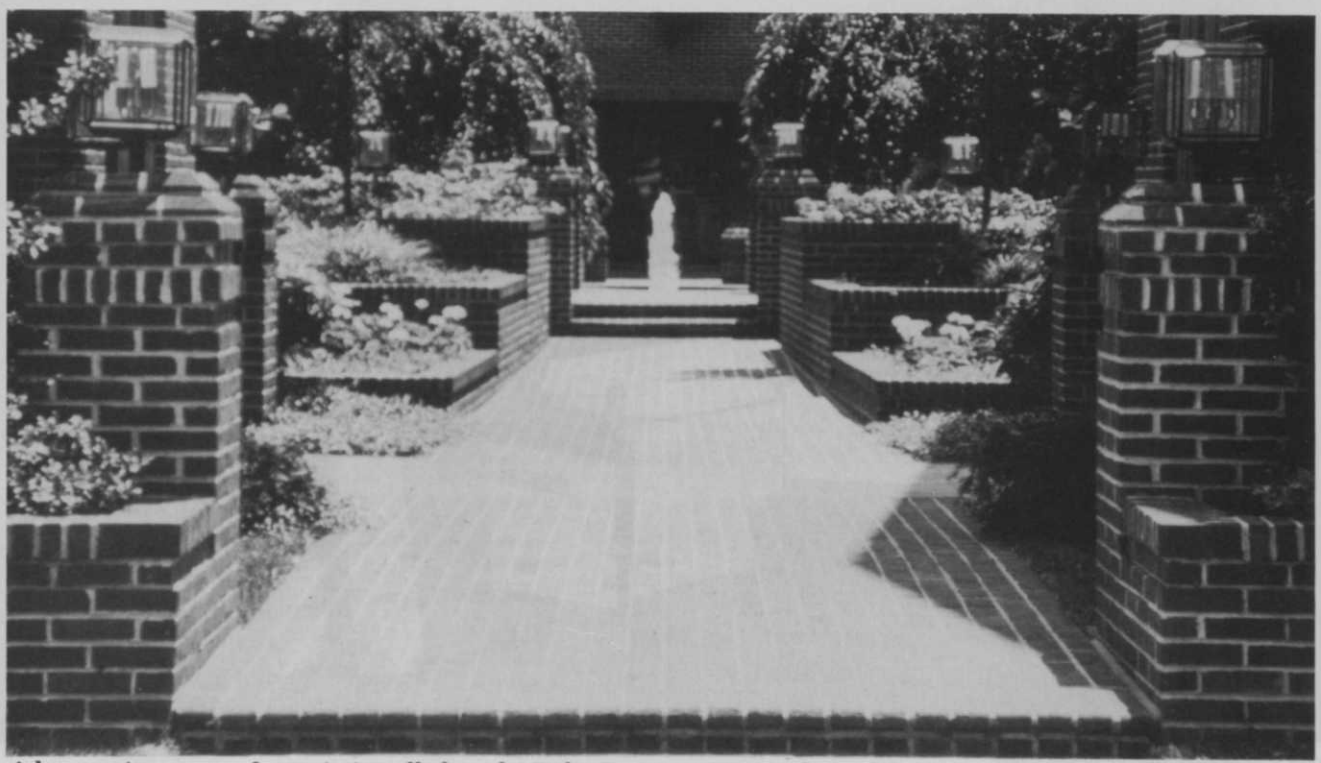

A harmonious water fountain installed on the Duke Street project in Alexandria, Va.

I thought we would," he says. "My goal has always been to do a quality job and let the result of that dictate the size we will be. I felt we could grow, but we didn't sit down and say we would be this size by this date."

His partnership in a lawn and garden center lasted from 1964-67 ("we struggled," he recalls), but working every day from March 1 to July 4 left the University of Maryland grad little time for his wife Janet, who was expecting their second child.

(Daughter Deonne, 19, is now a sophomore at Western Maryland College while son James is a junior at Blue Ridge School in Dyke, Va.)

They solved their problem by starting their own business on a plot of land purchased in 1967.

A commercial business

Little Chapel Valley, officially seeded in 1968, prospered from day one. Landon and Janet still worked six to seven days in the early years until growth and key hirings made possible more relaxing five-day weeks.

Chapel Valley started in both residential and commercial landscaping but has made an intentional turn toward commercial.

"Ten years ago we did as much residential as commercial," says Reeve. The switch, he says, allowed the company to reach a "comfort level."

"We felt our production could be a little better with the commercial end. We get a better return on our dollar," he says.

"We felt you couldn't serve both with the same attitude and same people. Residential is a much more emotional experience while commercial is much more objective."

Reeve feels his company—with its large-equipment inventory—is more effectively geared toward the less labor-intensive commercial construction end. "We really felt we weren't serving the residential customer properly," he says. "We still do a certain amount of residential, generally large residential projects."

Reeve: a support person

Commercial landscaping, maintenance, marketing, quality control—Chapel Valley's services are prototypical of a successful firm.

Reeve touches all areas, both directly and indirectly, in the form of a support employee. "I spend a lot of time working with the four managers, working to help them achieve their goals. Since I am a horticulturalist I might accompany the sales people to a presentation."

At other times, Reeve thinks about tommorow, not today. "I'm spending more and more time doing forecasting and planning—that is, what are we going to do next year," he says.

He's also the PR man. "I'm involved with ALCA (he's immediate past president of the Associated Landscape Contractors of America/Landscape Maintenance Division) and other associations. As a person I feel I have an obligation to try and project our company in a positive way to both the industry and the public," he says.

One of his PR tools is a slick, full-color brochure titled "Landscope." It's published quarterly.

The marketing tool showcases Chapel Valley accounts, explains company philosophy, and introduces and reintroduces company employees.

Employees Tom Tait (Baltimore marketing manager), Stewart Rom (landscape architect), and Peter Koeppen (marketing representative) collaborated on the editorial material while Koeppen and Reeve handled photography.

Group participation. Teamwork. A blending of various talents into one coherent whole. Satisfied clients. That's why Chapel Valley has enough awards to wallpaper its office. **WT&T**

NEW TURF BLAZER II

INTRODUCING NEW GENERATION OF DIRECT DRIVE ROTARIES

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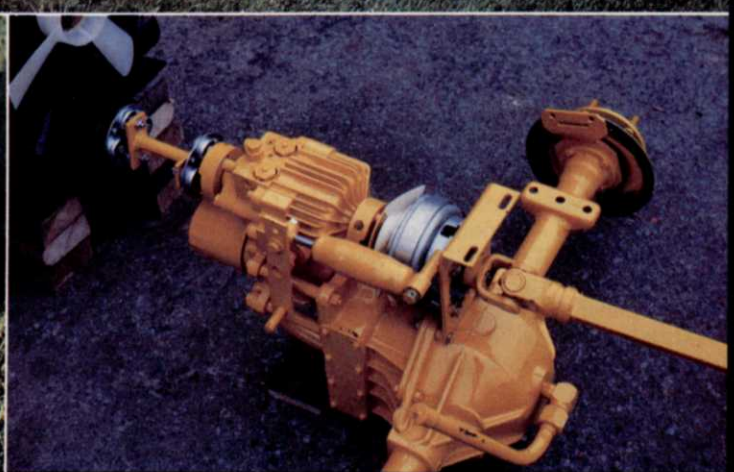

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A Frank Statement to Golf Course Superintendents about Weed Control Today

Yesterday, Trimec® Broadleaf Herbicide was the undisputed champion. Today, it is a Classic, and the new champion is Super Trimec.® Let me explain what this new herbicide can mean to you.

Everett Mealman, *president*
PBI/Gordon Corporation

Before I get into this, let me briefly review our love affair with golf courses.

It started back in the sixties when we were measuring the sales potential for Trimec prior to launching it in the U.S.A. In those days, most golf courses were using herbicides from AG-oriented companies who considered 70% control as *total* control, and assumed that a golf course superintendent could arrange his schedule to apply herbicide on nice warm days when the weeds were actively growing.

Trimec control was very close to 100%, and could be applied in cool weather. We needed to know just how important these features were to a golf course superintendent.

A superintendent in Tulsa told us the facts of life.

In the process of our market survey, one of our salesmen called on the superintendent of a very prestigious course in Tulsa, and asked him how important it was to eliminate all weeds, and, if so, did the greens committee care how much time and money he spent getting the job done.

The superintendent answered with a question of his own: "Do you know what they call golf course superintendents who wonder if a few weeds are acceptable, and if the greens committee cares about money?" And then he answered his own question. "They call them unemployed golf course superintendents."

We got the message. We did put Trimec on the market, and it became by far the number one herbicide wherever the objective was immaculate turf.

Records are made to be broken.

Surveys have shown Trimec being used by 87% of the golf courses in America, and receiving the fewest complaints of any chemical used on golf courses. On the other hand, we occasionally heard that Trimec didn't always get Spurge, Oxalis and Ground Ivy with one treatment; that some superintendents would like to spray even later in the fall and earlier in the spring; and would like to use even less chemical per acre.

We reacted to these problems like the president of Rolls-Royce, who said, "We've got to silence that blankety-blank clock," when he was shown an ad that said . . . *At 60 miles an hour the loudest noise in this new Rolls-Royce comes from the electric clock.*

We wanted to get all of those blankety-blank weeds, including Spurge, Oxalis and Ground Ivy. We wanted to give the superintendent more dominion over the weather. We wanted to help him reduce the amount of chemical he released into the environment; and we wanted to further reduce his cost per acre.

And thus it was that we launched an all-out effort to find a way to combine different esters with the ability to form a complex with dicamba and hold it firmly in place . . . Today, the formulation exists and is called Super Trimec Broadleaf Herbicide.

There's no doubt about it: Dollar for dollar and acre for acre of immaculate weed-free turf, Super Trimec is the most efficient post-emergent broadleaf herbicide on the market . . . period!

ONLY PBI/GORDON

"What a beautiful sight. Number 3 green at Mission Hills in Kansas City, getting a beauty treatment. Mission Hills is surely one of the finest country clubs in America, and just as surely they use Trimec. Carl Beer, the superintendent, tells me that the members want immaculate turf, but want it achieved in an efficient manner. According to Carl, that means Trimec."
Everett Mealman

Does this mean that Super Trimec is even more efficient than the old-reliable Classic Trimec?

Yes sir, that's exactly what it means. But let me make one thing clear. Super Trimec is not for amateurs. It's a professional product that needs to be handled in a professional manner. And, to express its maximum efficiency, it needs to be applied evenly at a rate that doesn't exceed label directions per acre.

So what about Classic Trimec? Will PBI/Gordon continue to make it?

Indeed we will. There's still a time and a place for Classic Trimec, just as there is still a place for 2,4-D. And because you're a professional, you'll know the time and the place to use both products.

Furthermore, we will continue our efforts to further improve the effectiveness of Classic Trimec.

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ISLAND OF GAMES AND GRASS

English schoolboys after an afternoon soccer game in Yorkshire.

Great Britain's sports scene includes everything from bone-jarring rugby to afternoon lawn bowling with tea. The common thread? A love for natural grass playing surfaces

by Ron Hall, associate editor

Rivulets of perspiration stream down my back. Darn this blazing red wool sweater. Hot enough even without this coat.

Alternately jogging and walking in stiff wing-tips, the radiator boiling over in this surprising late-afternoon English sun, I realize he's going to get a kick out of this. This is picture-book stuff.

Can you believe it, a lady's tea party over a game of bowls (lawn bowling) in a public park bordering Nottingham University. The elderly women, hatted and bedecked in white finery, chatter like so many little birds on this warm fall afternoon. Ebony woods (oblong balls made of rockhard lignum vitae) litter the gutter-bounded court, a grass surface as smooth as a bridge table. Framing everything, tiers of manicured shrubbery.

"He" is Dr. Kent Kurtz, turfgrass professor at Cal-Poly University, my traveling partner, and, it's dawning on me, my friend. Days in the same hotel rooms, the same cramped overnight sleeper, the same tiny rent-a-car will do that.

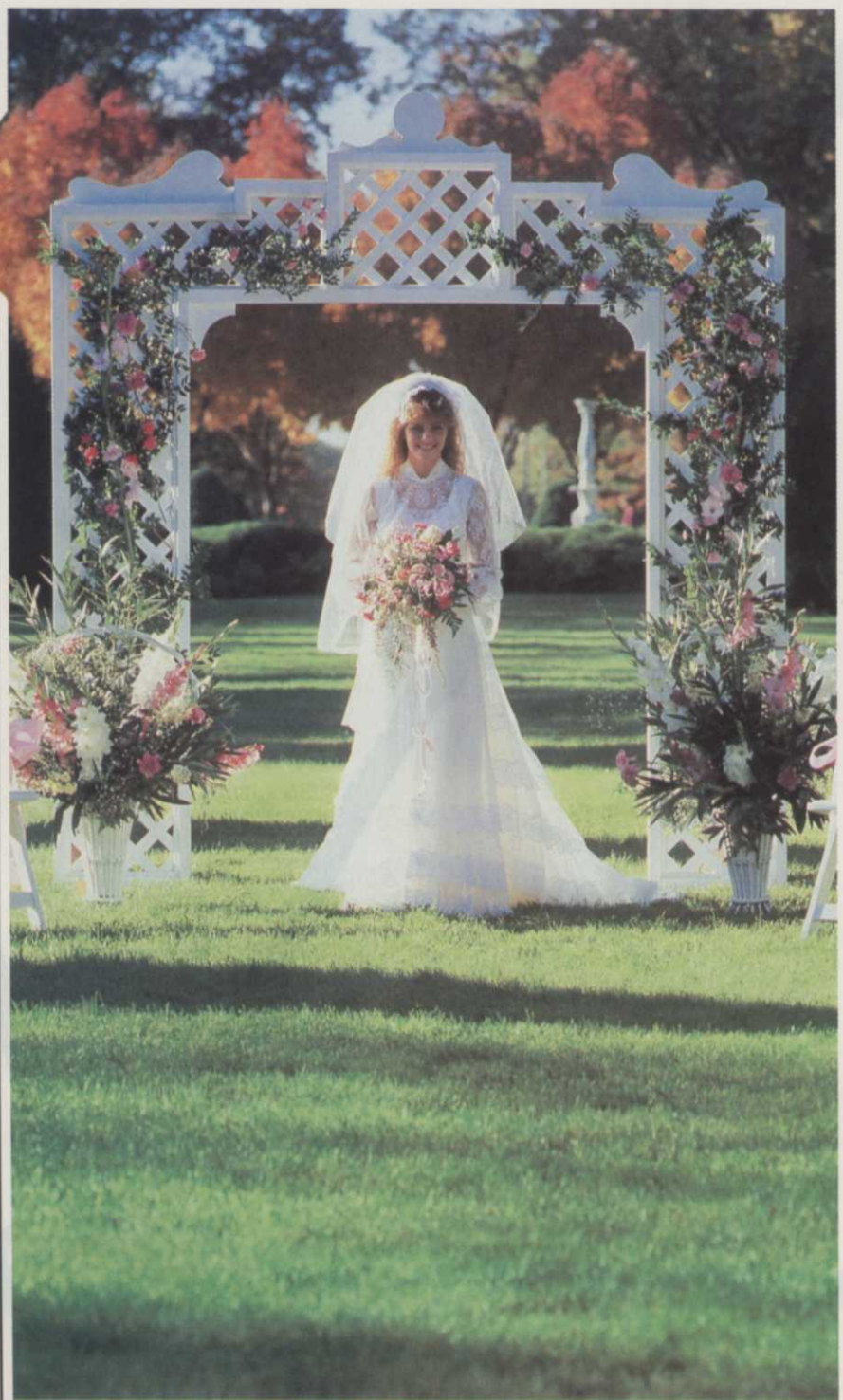
It's that, or sharpened bunker rakes, toe to toe.

And "he," chin on chest, is propped in a chair in the back of a lecture hall. The speaker at the National Turfgrass Council creeps into informational overdrive. Kurtz snoozes.

Can't blame him really.

Nine days and dozens of faces rattled by like the clacking of that over-

A thing of beauty is a joy forever. Unless there are grubs in there.



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Diazinon. The bug stops here.

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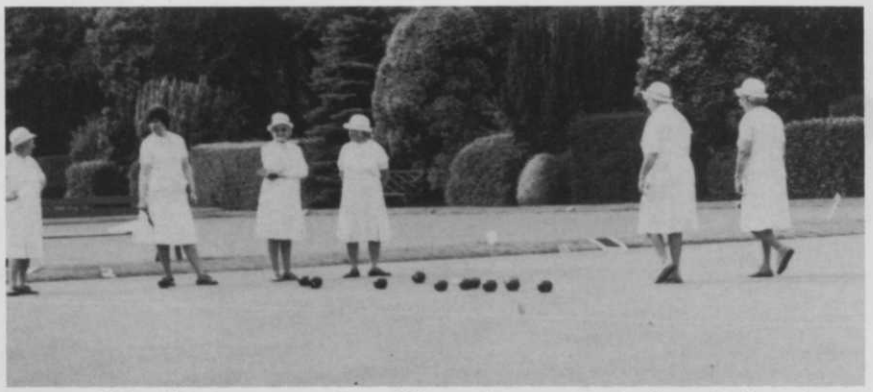
ENGLAND



Fine turf like this is common in public parks near Nottingham University.

night rail spring in a sleeper London's King Crossing to Edinburgh. That's the way to run a railroad: midnight and on time, tee and cookies before turning in too. Chalk up another 1,100 miles of open road in a rented Renault.

We were part of the 35,000 to kick tires at the massive IOG Trade Show in Windsor before fingering turf at some of the finest lawn tennis facilities in London (and the world), and cruising cricket pitches on village greens.

With the sluggish Thames as a backdrop, diplomat's families putter on the immaculate grass bowling and croquet courts at exclusive Hurlingham, a private club. Hurlingham and its grass impressed us.

In brooding Edinburgh, massive Murrayfield Stadium, home of Scottish rugby, sat silent in the rain (nothing's as empty as a stadium without a game). The groundsman here coaxes the grass tall and healthy.

We shivered in Glascow's Ibrox Stadium as the hometown Rangers played listlessly in a game-long downpour and lost to visiting Dundee 2-0. This was soccer, world-class variety, and the grass was mowed shorter, the field surprisingly firm.

On this island, an island of gardens and games, the grass of a playing surface is *important*. Groundsmanship can be a respected life's work if not well paying. And universities teach groundsmanship; trade journals serve it. Both stress the technical in hand with the practical.

In Britain, where only two major stadiums sport synthetic turf, you don't just announce yourself as a groundsman.

Equidistant between Glascow and London, in tiny Bingley, is The Sports Turf Research Institute, a 64-year-old institution with new headquarters. Here grass is pampered then literally reduced to fibers to determine the best possible playing surfaces. This facility with a staff of 45 *sells* its services to sport and golf. It's virtually self sufficient.

These impressions will last. And this final one of the tanned, young groundsman waiting to care for the court in that Nottingham park as the women's club concluded its afternoon bowl. **WT&T**

PROTECTING A GREEN HERITAGE

London's exclusive Queens Club stays atop the international lawn tennis world with aggressive solutions to today's sports problems.

BANNED: American tennis whiz John McEnroe and a new-generation tennis shoe.

Neither are welcome at the Queens Club, an exclusive London tennis enclave. The reason? They're irritating—McEnroe to club members, the shoe to the grass playing surface.

Dawns the new hard-charging world of sport at this oasis of gentility—turfed tennis playground for London society. Aggressive play and modern equipment push the grounds manager and the grass here to their limits.

Groundskeeper Dave Kimpton shoves back.

"We banned them," says Kimpton of the new pimple-soled footwear. Initially worn by visiting pros for better traction and quicker starts, the new shoe caught on till finally 90 percent of the players on the club's famed grass courts were wearing them. The grass—a mixture of perennial rye, creeping red and chewings fescue, bluegrass, and browntop—couldn't take it.

Blame also today's athlete.

"These people are super fit and they can run around for three or four hours," says Kimpton. "It's really a different game now. These people are more aggressive. The courts take a bashing."

Centennial year

Kimpton, intense as he is short, ranks as one of England's most respected (and better paid) groundsmen. This marks the 100th year for his club which began as an ice rink and rifle range and, about 50 years ago, installed tennis courts. Old, well-maintained apartments circle the club with blocks of startingly different architecture marking the fall of German bombs 43 years ago. Dave starts his 20th year here.

Tennis is this club's calling card. In addition to the turf courts, players have their choice of clay and synthetic surfaces. New indoor tennis and squash courts recently came into play also.

Things are happening at this square patch of green in the bustling, over-grown West Kensington area. The club is internationally known.

Financially hurting through the 1950s, the Queen's Club revived under the management of the Lawn Tennis Association, England's governing body of tennis. Along with this infusion of cash and renewed spirit rises new offices of the International Tennis Federation bringing 100 new faces.

While better-known Wimbledon numbers 375 members, the Queen's Club counts 4,000 with about half that number playing regularly. "This is a club that is used and used all the time," says Kimpton. Court time is booked eight days in advance.

But, like Wimbledon, the Queen's Club hosts a major tournament annually when spectator stands cover two of Kimpton's turf courts. Galleries of 15,000 crowd to watch top interna-

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SPRAY PATTERN INDICATOR

By Milliken Chemical

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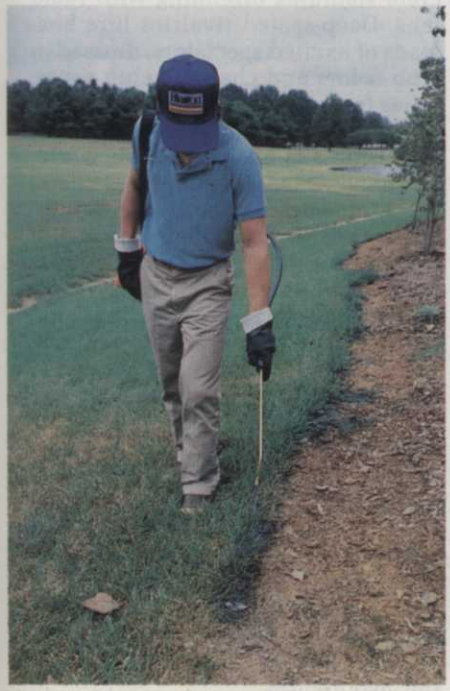

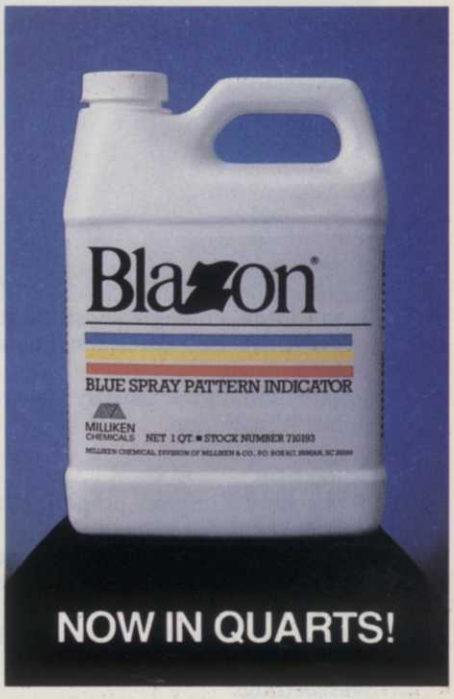

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Blazon® is a liquid which readily goes into solution. In hand held and backpack sprayers, add ½ to 1 ounce per gallon. For broadcast spraying, the application rate will vary from 16 to 32 ounces per acre, according to the height, color and density of the target foliage.

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MILLIKEN CHEMICALS Milliken Chemical, P.O. Box 817, Inman, South Carolina 29349, (803) 472-9041, (800) 845-8502

Dave Kipton, chief groundsman for London's Queens Club, with the lawn tennis courts he's cared for the past 20 years.

tional competitors, usually the week before Wimbledon.

Court tips

Here's how Kimpton prepares these turf courts:

- Each spring he scarifies, passing sharp blades over the courts five or six times. Spikes are criss-crossed an additional six or eight times, the final pass with one-inch spikes for overseeding.
- An application of chlordane kills the earthworms. Worm castings play havoc with a bouncing tennis ball.
- Fungicides are usually needed several times each summer. "I just tend to keep an eye on things," says Kimpton. "If I see something down there, I have to tweak it."
- Fertilizer in a light peat base is applied twice annually, in the spring and the fall. The fall feeding is heavier with phosphorus and potassium, the spring application with nitrogen.
- Sand topdressing at least twice each season helps smooth out the wrinkles.
- Soil pH is checked at least once every two seasons.

Kimpton's job is to maintain the health of the turf while providing the hardest, smoothest surface possible. Ransomes reel mowers keep the turf at 3/16-inch.

Says Kimpton, "it's getting to the stage where I'm beginning to need a head groundsman to do some of my work." And part of that reason, of course, is the attention his courts get from world caliber players.

Says Kimpton: "The professionals play here four or five weeks each year, and the wear they create is more severe in that short period of time than the members the rest of the season."

And the banned McEnroe, a three-time champion at the Queen's Club?

It seems unpleasant words were spoken when he disputed court time on one of the all-weather courts.

"I guess it's bit snobbish," Kimpton says with a hint of a smile in his blue eyes.

—Ron Hall

SOUTER OF STIRLING

Scotsman John Souter's international reputation grows as the rescuer of sports playing surfaces. Providing proper drainage is his starting point.

John Souter, stonefaced in thought, sits in the gloom of Glascow's Ibrox Stadium, in the director's box. The *people to know* fill these sheltered, midfield seats high above play. These are the people who gather at halftime in a cozy paneled room to trade pleasantries over coffee and tasty bite-sized pastries.

Souter earned his station in this group.

This 40ish Scot—always, it seems, dressed for business—makes a comfortable living giving his sport-loving countrymen with what they want. And what they want is grass that can take the pounding of cleated athletes during Scotland's damp North Sea winter. That's the season for rugby and soccer here, played in huge concrete stadiums brimming with rabid fans. Deep-seated rivalries lure busloads of excited spectators, dressed in club colors and chanting club songs, miles from home.

In contrast, the enigmatic Souter.

Business is business in his world, no shenanigans. His employees *don't* drink and drive. They, like Souter, dress well; they pick their words with care. And fun is fun. Souter's lighthearted presentation honoring Dr. Bill Daniel slid into a round of song at the Midwest Turf Conference last March. His wit, sharp but not unkind, is often aimed inward.

Rain falls

Today soaked Ibrox pulsates as the hometown Rangers match up with the visiting soccer team from Dundee. A weeklong rain that barely slackens prior to gametime has Souter, in a natty camel overcoat, his straight blonde hair pasted over a balding pate, surveying the shredded grass in the goal mouths.

Earlier this week this same Ibrox field drank in three inches of rain while the Rangers battled a Spanish team in what one local sports writer described "as the worst conditions I've seen in 25 years of covering the game." The scars of that contest, just three days later, are not evident.

That the game is played at all speaks well for the dogged inbred persistance of the turfgrass (mostly perennial ryegrass). And for Souter's work. Ibrox is just one of many fields installed or

John Souter, left, and Eddie Connaughton review drawings for a new Scottish golf course.

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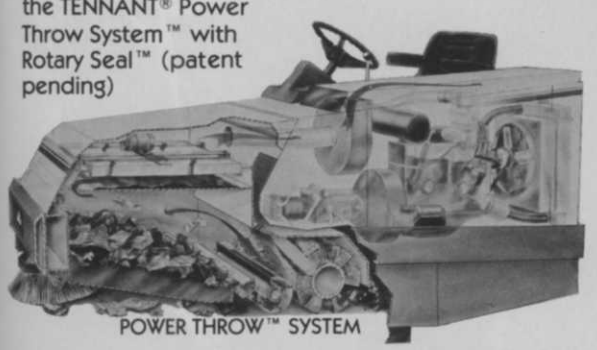

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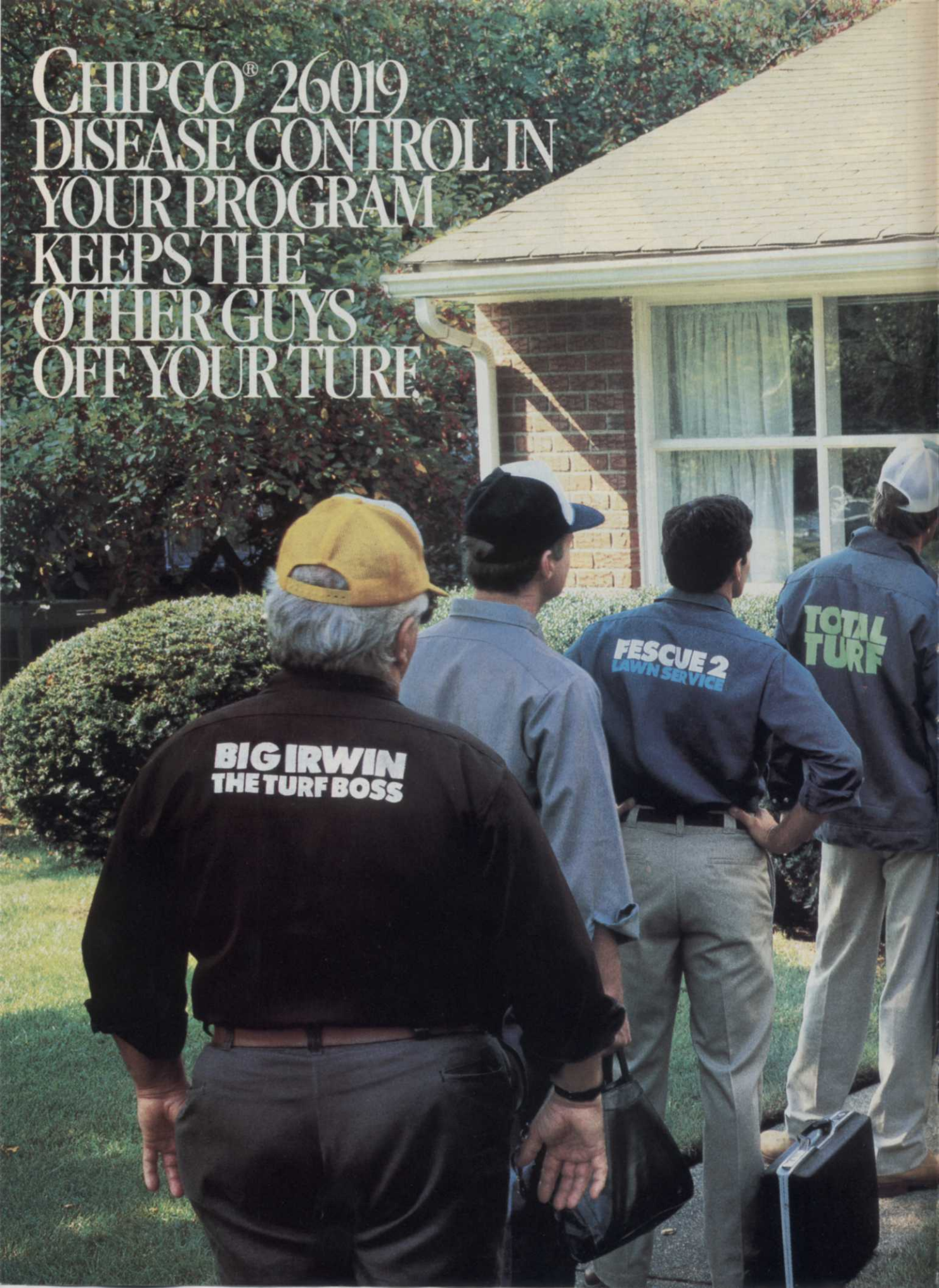
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ENGLAND

Soccer is big business in the UK. This Glascow field, Ibrox Stadium, gets Souter's attention.

renovated by Souter since 1967.

Souter's reputation, fueled by an understanding of proper drainage, expands in spite of a tiny (by U.S. standards) support team of just five trusted field foremen. "Each of my boys can take care of a big job," says Souter. These men personally oversee maintenance on many of the of the 18 major fields in the UK which he has renovated.

Rows of sand

Drainage is the cornerstone, and one of the tools he uses is the so-called Morton Sand Slitter, devised by Irishman Alec Morton. This machine, looking like a pregnant cyclone spreader, lays 3,000 yards of sand slits (50mm wide, 100-300mm deep) daily. There are reportedly only two in the world, Morton's and Souter's.

The success of this sand-slitting technique is going international.

In 1984 Souter jetted to Malta in the sunny Mediterranean to rescue a four-year-old, clay mud pit known as the National Stadium at Ta'Qali, one stop on the prestigious FIFA (soccer's international ruling body) circuit. Just four years old, the Ta'Qali stadium had been described as "notorious" by writers.

Souter recommended working 1,600 tons of medium/fine sand (125-500 microns) four inches into the regraded and recrowned field. Periphery and lateral drains, as well as sideline manholes, were installed along with irrigation.

His maintenance program (the Malta grounds staff came to Scotland for training) includes spiking three times weekly plus frequent sand top dressing. Late in 1985 the field received additional sand slits. The success of this work garnered Souter contracts for seven additional soccer pitches. Work began on four of these last fall.

Other directions

But while sports field renovation spotlights Souter's work, his firm, *Souter of Stirling*, grows in other directions including the design and renovation of golf courses, and the sale of turf machinery and products.

The newest member of his staff, Eddie Connaughton, an ambitious young Irishman with a Purdue University turfgrass background, took to the road as Souter's salesman this past summer. Ever-smiling Connaughton, a scratch golfer who played for Ireland before earning his Purdue letter jacket (which he still wears with some pride), works out of Souter's headquarters in a low-slung block building in Stirling, dominated—as many Scottish cities are—by a brooding castle. A staff of 20 works here about 40 minutes from Edinburgh.

Souter, however, professes little concern for getting bigger.

"I'm not looking to get much larger for the quality aspect of our work," he says. "After that I think you get into buck shifting."

Here on the outskirts of industrial Glascow the young athletes, hair still damp from the showers, file out of now-silent Ibrox into the rain. No celebrations here, the hometown Rangers lost.

Souter is in the basement examining huge conduits which snake into and under the stadium's turfgrass surface and will keep it from freezing in the months ahead.

—Ron Hall

Maneuvering for Profit

HUSTLER's new 18 hp 251, with rear discharge, brings commercial quality mowing to the 50" Class...at a competitive price.

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Agile. The new Model 251, with its 51" deck, has all the "Hustler Tough" commercial features, including dual-hydrostatic direct-drive, true zero-degree radius turning and the easy maneuverability of one-hand, twin-lever steering. Like all HUSTLERs, the 251 can actually turn within its own radius without scuffing the turf. That means you can mow square corners without wasted motion and quickly trim around small obstacles without having to backup for another pass!

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Traditionally, landscaping is used to decorate and direct.

It highlights your strengths, hides your weaknesses, and indicates where to look and walk.

But recently it has taken on a new role: helping lease space at new office complexes and industrial parks.

In the past, the star at a new development was the bright new building. The trees came later. Developers landscaped only minimally, planting small trees, hoping that in 20 years the trees would be bigger and fuller, thus hiding the aging building.

Today, that's not the case. "Trends in commercial landscaping have changed dramatically in the last 10 to 15 years," says Walter Flowers, president of Moon/Rickert Nurseries in Yardley, Pa.

"Until recently, the main consideration for landscaping was the zoning requirement, what you had to do to get site plan approval. Today, to put it in a nutshell, developers are spending more money on larger specimens to create an instant effect earlier in the construction of a project," he says.

An established look

Flowers says developers want potential tenants to "feel" that a new building has been there for a while.

"Going in up front with landscaping creates that impression. Then leasing agents don't have to rely only on renderings showing

Above and below left, the landscaping is showcased at The Prudential's Freedom Business Center in Valley Forge, Pa.

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projected landscaping. It's an immediate amenity. And if the site is aesthetically pleasing, it's much easier to sell the package," he says.

Flowers cited Prudential's Freedom Business Center in Valley Forge, Pa., as an example of the new trends.

Long before the steel went up, the site was graded, topsoil was spread, grass was planted, and the parking lot, signage, and marketing trailer were landscaped.

"When a potential tenant came to the site, he saw attractive landscaping from the highway to the parking lot to the marketing center and back again," says Flowers.

"Hopefully his impression was that if Prudential is taking care of the outside, they probably will take care of the inside as well," he adds.

Ken Koldziej, Rickert vice-president of sales, says competition has caused the landscaping change. "The better developers are spending money because they're trying to attract better tenants in return," he says.

"Some clients are spending $1.50 a square foot just for landscaping alone. Some will spend more than that on small projects," says Koldziej.

"Suppose you had $10 million in buildings. Even with a 10 percent interest rate, that's $85,000 a month it costs to have empty square footage sitting there. So if landscaping helps to rent the space, it's worth the investment," he says.

An expected amenity?

But there's a flip side to the investment issue. Some say quality landscaping is becoming such an expected amenity that it's difficult to know if you're getting a return.

"As far as working out the dollars and cents, it's very hard to pinpoint," said Kim Sermersheim, investment manager for The Prudential Realty Group and project manager for Freedom Business Center.

"You look at landscaping from a cost point of view but you also look at what the landscaping contributes to the quality of the site.

"As we come into work along the highways, we're bombarded with various forms of visual pollution," Sermersheim continues. "Road signs, parking lots, and electrical and mechanical equipment, for example, all detract from an attractive and comfortable office complex."

Sermersheim adds that landscaping can transform these unsightly areas and create a natural and pleasing environment.

Sermersheim has no qualms about calling Freedom Business Center "extensively landscaped."

"Most times it refers to quantity, not quality. When we use the term, it refers to both. The Prudential philosophy is to create quality work environments that people will appreciate on conscious and subconscious levels. That's where you get returns on your investments: by tenant satisfaction, lease longevity, and a positive image as a developer who cares," he says.

At Freedom Business Center, situated on 24 acres, the landscaping was purposely blended with the existing campus.

"The design goal was to introduce four new buildings to a site bordered by well-landscaped properties and Valley Forge National Park," says Koldziej.

"Prudential added 400 trees to the site and accented it by adding berming and mounding, which gives the site curves and angles and makes it appear softer visually and physically. Now the site gently rolls right into the park," he says.

A softer look

Koldziej notes several techniques that give a site texture and color to make the buildings appear to be more than steel and concrete. Among them:

- Small, round trees or shrubs at corners to soften visual lines,
- Winding paths from the parking lots to the buildings to create a relaxing mood,
- A variety of trees to give visual relief.

Flowers tells an interesting story of how a different tree didn't work.

"We had a client who spent $150,000 to landscape a fairly small site. We put some trees in the entrance that were outstanding specimens but had strange, twisting shapes.

"The chairman of the board had us remove them and put in evergreens. His rationale was that crooked trees projected a crooked image. Evergreens, on the other hand, were straight and trim, corporate and structured.

"That's how far it's gone. Even CEOs are concerned with how landscaping projects an image," says Flowers.

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A message from the Crime Prevention Coalition, this publication and The Ad Council.

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SUNBELT SYNDROMES

Landscape manager's guide to diseases cool and warm-season trees and ornamentals

by Donald J. Blasingame, extension plant pathologist, Mississippi State University

The southern U.S. is blessed with an ideal environment for the growth of most ornamentals plants. Unfortunately, the same environment is also ideal for the development of a number of disease agents, especially fungi.

In a short article it is impossible to list all ornamentals grown in this region and the diseases that attack them. Rather, we will list nine of the more common ornamentals grown in the sunbelt and the major disease problems they face.

Azaleas

Azalea Petal Blight: This disease is largely confined to azaleas grown in the southern coastal states from Maryland to Texas. Indian and Kurume azaleas are especially susceptible.

Above, azaleas afflicted with petal blight. Petal blight sometimes affects the blooms of entire plants within a few hours. Below, entomosporium leaf spot of photinia. Once established, the disease is difficult to control.

The disease first appears as small, water-soaked spots on the petal. These spots sometimes give the flower a freckled appearance.

Under favorable conditions the spots enlarge rapidly and cause the flower to become limp and eventually collapse. The entire flower appears to "melt down" and tends to cling to the foliage rather than fall to the ground as spent healthy flowers.

Petal blight often affects the blooms of entire plants within a matter of a few hours, progressing so rapidly that it destroys the beauty of the plant overnight.

The fungus lives from season to season on infected blossoms in the mulch. Therefore, to control flower blight, one must remove all the old mulch from around the plants and replace with new mulch before the plants begin to bloom. Drench the soil with Terraclor in early January using one cup of 75 percent WP in enough water to wet 100 sq. ft.

When the blossoms begin to open, apply either Thylate, Bayleton, or Zyban as a blossom spray. Additional applications may be needed during the blooming period.

Twig Die-Back: Several fungi are associated with this disease complex.

These fungi normally enter the plant through either bud or leaf scars. The die-back organism may kill a few inches of the twigs or, ir untreated, consume the entire plant.

To control die-back one must prune and destroy all infected branches. Remember that the normal pruning period for these plants is just after blooming. Since the infection period is just after the bloom season, one must continue his spray program for petal blight beyond the blooming period.

Leaf Gall: Leaf and flower gall is a common disease on azaleas and camellias in the south. The fungus may infect the developing leaves, stems, and flowers—causing severe distortion, swelling, and thickening of the plant parts.

As the galls form, the infected parts may become white or light green. The

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John Linkhart
Currently the owner/operator of Hart's Lawn Service as well as a senior consultant for AGMA, Linkhart was formerly the V.P. Operations for Perf-A-Lawn. He has been involved in every aspect of operations from both the standpoint of an owner as well as operating his division for a major national company.

Rudd McGary
A senior consultant with AGMA, Dr. McGary was formerly on the marketing faculty at Ohio State. He has been involved with marketing and management in the Lawn Care Industry for eight years, helping design both marketing and management systems for a wide variety of over 50 companies in the industry.

Bob Robinson
Robinson is a senior consultant with AGMA as well as running his own mulch company. Formerly Robinson was in charge of all agronomic programs for Chemlawn, which included both the selection of materials as well as assessing operating costs.

Ed Wandtke
Currently a senior consultant with AGMA, Wandtke was the Corporate Finance Manager for Chemlawn. A CPA, Wandtke works primarily in the areas of finance and accounting for AGMA with a broad-based background in all operating areas of lawn care.

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disease may be particularly severe during cool, moist weather.

The best control is to remove the galls when first noticed, at a time when only a few galls are present.

There may be situations where removing galls is not practical. In such cases, a spray program may control the disease. Spray the plants once before the new leaves are unfurled using Maneb, Captan, or Zineb. Apply at 14-day intervals during the spring or as long as young leaves are present.

Boxwood

Boxwood Blight (Canker): The term *branch and twig blight*, is used to describe the problem of twigs or entire branches dying when the remaining parts of the plant appear healthy. Leaves may shed prematurely leading to the death of the twig. The affected foliage takes on a light, straw color.

Several fungi are associated with boxwood blight in the south. To ensure maintenance of healthy plants where blight is a problem, one must utilize an annual program of pruning, sanitation, and spraying. The annual removal and burning of all dead leaves and twigs lodged in and around the plants is important.

Several applications of a broad-spectrum fungicide—Daconil, Maneb, or fixed copper—have been effective in preventing most blighting problems.

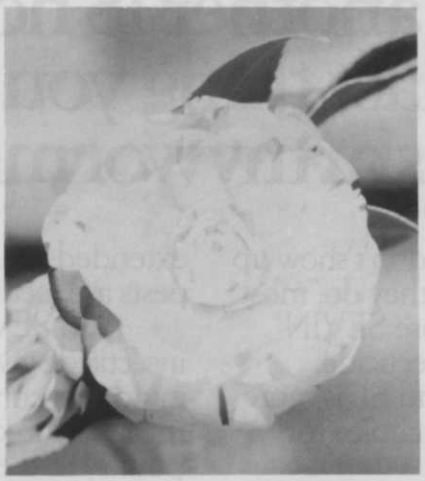
The first application should be made when the plants are pruned, followed by a second application when new growth is approximately one-half completed. The remaining applications can be made at various intervals depending upon further disease development.

Nematodes: Nematodes are small, worm-like organisms that attack a plant's root system. Boxwoods grown in the south are susceptible to a number of nematodes including rootknot, lesion, spiral, stubby-root, lance, and ring.

The weak nematode-affected plants gradually decline. If nematodes are suspected, a soil nematode analysis is needed to determine the types and population of the nematodes present.

Few chemicals are available for the homeowner's use in controlling nematodes. In some cases it is more practical to replace infested plants with a different variety of plant that is not affected by the disease.

Phytophthora Root Rot: Off-color foliage followed by sudden wilting and death of the entire plant is characteristic of this disease. Yews, rhododendrons, and a large number of other woody ornamental plants are also subject to Phytophthora. It is extremely difficult to rid infected plants of this disease.



Ring spot virus of camellia causing variegated flower color.

The disease is more severe in poorly drained soil. Although Subdue and several other soil fungicides are labeled, chemical control is difficult.

Camellia

Flower Blight: This blight is confined to the flowers which turn brown and drop. Most species and varieties of camellias appear to be equally susceptible to this blight.

The control of camellia flower blight, although caused by a different fungus, is similar to that for azalea petal blight.

Die-Back: A canker and die-back of camellias is widespread and frequently destructive in the southern states. The fungus normally enters through wounds or through natural openings such as scars left by abscissing leaves or petals in the spring.

Once inside the plant the fungus moves down the twigs causing a gradual die-back. If left untreated the organism will move back to the main stem and kill the plant.

To control, prune and destroy all cankered twigs. Surgical removal of diseased portions may be effective when the cankers occur on a plant's main stem. Use tree paint containing a fungicide to cover all cut areas.

A fungicide application shortly after the blooming season can protect the plant from entrance of the fungus through natural openings. Materials such as benomyl or daconil have proven to be effective.

Leaf Gall: The symptoms and control of leaf gall on camellia are similar to those that occur on azaleas.

Virus Diseases: The several diseases appearing on camellias normally appear as variegation or yellowing in the leaf or flower. Not all yellowing of camellia leaves is a result of a viral infection. They may indicate a type of nutritional disorder.

Plants suspected of harboring a virus should be discarded or at least isolated from healthy plants. Care should be taken while pruning so that suspected plants are pruned last to prevent spreading the virus to healthy plants.

Six steps for healthy camellias: A successful camellia disease control program requires a well-planned, integrated plan. Here is an example of such a program that will help reduce many of the camellia diseases:

1. Buy only disease-free plants. Isolate new plants from existing plants for three to six months to check for any possible disease development.

2. Take cuttings from current season's growth from the top of healthy plants.

3. Root in a disease-free environment. If possible, use a sterile rooting medium.

4. Prune plants properly. Do the major pruning just after the flowering period. Paint the wounds properly with a pruning paint.

5. Use good cultural practices such as:

- proper air circulation;
- correct amounts of fertilizer. Over fertilization causes problems, especially when plants are most susceptible to die-back;
- mulching when possible;
- removing and destroying diseased or spent flowers.

6. Use chemical controls. In areas where flower blight and die-back are problems, follow an annual spray program along with the previous suggested practices.

Dogwood

Anthracnose: Spot anthracnose is a serious disease that attacks flowers, leaves, young shoots, and berries.

The flowers are usually malformed and covered with small, circular reddish to purple spots. The margins of these spots are normally much darker in color than the centers.

Leaf infection occurs after the blooming season is over. Heavily infected young twigs may die back sev-

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DISEASE CONTROL GUIDE warm season

PLANT DISEASE DEVELOPMENT CALENDAR

PLANTS	DEVELOPMENT OR DISEASE	PATHOGEN SCIENTIFIC NAME	PLANT PARTS AFFECTED	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Trees															
Crab Apple	Flowering														
	Cedar apple rust	Gymnosporangium sp.	leaves												
	Fire blight	Erwinia amylovora	shoots												
	Powdery mildew	Podosphaera leucotricha	shoots												
	Scab	Venturia inaequalis	fruit leaves												
Dogwood	Flowering														
	Anthracnose	Elsinoe corni	leaves flowers												
	Leaf spot	Septoria floridae	leaves												
	Scorch	Physiological	leaves												
Oak	Flowering														
	Anthracnose	Gnomonia veneta	leaves												
	Leaf blister	Taphrina caerulescens	leaves												
	Rust	Cronartium sp.	leaves												
Pine	Flowering														
	Eastern gall rust	Cronartium quercuum	branches trunk												
	Fusiform rust	Cronartium fusiforme	branches trunk												
	Needle cast	Hypoderma lethale	needles												
	Needle rust	Coleosporium sp.	needles												
Red Bud	Flowering														
Red Cedar	Cedar apple rust	Gymnosporangium sp.	branches												
Red Maple	Flowering														
	Anthracnose	Gloeosporium apocryptum	leaves												
Saucer Magnolia	Flowering														
Sycamore	Anthracnose	Gnomonia platani	shoots												
Woody Plants															
Azalea	Flowering														
	Leaf gall	Exobasidium vaccinii	leaves												
	Petal blight	Ovulinia azaleae	petals												
Camellia japonica	Flowering														
	Flower blight	Sclerotinia camelliae	flower												
	Leaf gall	Exobasidium camelliae	shoot												
Camellia sasanqua	Flowering														
	Leaf gall	Exobasidium camelliae	shoot												
Crape Myrtle	Flowering														
	Powdery mildew	Erysiphe lagerstroemiae	leaves flowers												
Forsythia	Flowering														
Pyracantha	Fire blight	Erwinia amylovora	shoots												
Rhododendron	Flowering														
	Leaf gall	Exobasidium vaccinii	shoots												
	Dieback	Phytophthora cactorum and other species	young shoots												
Rose	Flowering														
	Black spot	Diplocarpon rosae	leaves												
	Botrytis	Botrytis cinerea	flowers stems												
	Powdery mildew	Sphaerotheca pannosa	leaves												

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eral inches from the tips.

The fungus can survive from year to year on these dead twigs. If die-back is severe, the dead twigs should be removed before a spray program is begun.

Anthracnose control requires early application of fungicides prior to blooming. A regular spray program is required for good control. Monthly applications of fungicides such as Benlate, Maneb, Captan, or Zyban can be applied during March, April, May, and September.

Nectria Canker: This fungus attacks dogwoods as well as other hardwoods in the southeast.

The first symptom is usually a dark area on the bark with a water-soaked appearance. These areas will begin to swell, resulting in a great deal of bark splitting. Infected areas may be a few inches to several feet in diameter and can completely gird the trunk.

Cankers are targets for insects and are easily broken during heavy winds. Control is difficult after infection occurs.

If the canker is small, cut the tissue back to healthy wood and paint with a wound dressing. Severely affected trees should be removed. No effective chemical controls are available.

Gardenia

Canker: Symptoms of this fungus disease are yellowing, wilting, shrivelling, and falling of leaves and buds. The cankers girdle the stems causing die-back. Cankers may enlarge to twice the size of the normal stem.

The fungus gains entrance through mechanical injuries so care should be taken when pruning the plants or mowing to prevent the disease from spreading.

Spraying with a broad-spectrum fungicide—Maneb or Daconil—soon after pruning is recommended.

Sooty Mold: Sooty mold is a frequent problem on leaves of evergreen shrubs such as azaleas, camellias, and gardenias.

The black, powdery coating develops on leaves and twigs during the cool, moist weather of late winter and early spring and fall.

There are several fungi or molds that grow in the sugary dew left on plants by insects such as aphids, scale, white flies, and others that suck sap from plants. This honey dew or sugary substance may occur on low shrubs where insects are not feeding but where the material falls from larger shrubs or overhanging limbs of trees.

Junipers resistant to phomopsis and twig blight

Juniperus chinensis	
cv.	Femina*
	Iowa
	Keteleeri*
	Pfitzeriana Aurea
	Robusta
var.	*sargentii*
	sargentii, cv. Glauca
cv.	Shoosmith
Juniper horizontalis	
cv.	Depressa
cv.	Depressa Aurea
	Procumbens
Juniper scopulorum	
cv.	Silver King
Juniper virginiana	
cv.	Tripartita*
Juniperus communis	
cv.	Ashfordii
	Aureo-spica*
var.	depressa*
cv.	Hulkjaerhus
	Prostrara Aurea
	Repanda
var.	*saxatilis*
cv.	Suecica*
Juniper sabina	
cv.	Broadmoor
	Knap Hill
	Skandia
Juniper squamata	
cv.	Campbellii
var.	Fargesii*
cv.	Prostrata
	Pumila

*Also reported resistant to cedar-apple rust.

The fungi that cause sooty mold do not attack the plants directly but derive their nutrients directly from the honey dew itself. These fungi will also grow on honey dew on walls, sidewalks, fences, automobiles, or anything where honey dew is present.

Control of sooty mold is indirectly achieved by controlling the insects that produce this sugary material. Once sooty mold has been established it is not easy to remove.

The best method is to soak affected plants in a water and detergent mixture by using one tablespoon of household liquid detergent per gallon of water and spraying on these plants. Wait for a few minutes and then wash the material off with a strong stream of water.

You may have to repeat the procedure several times. However, once completed, control of the insects should begin.

Holly

In the South, holly is subject to attack by only a few disease-causing organisms. Many times poor appearance of plants is often caused by improper planting, dry weather, cold weather, and planting varieties that are not adapted to the area.

The amount of damage from disease on hollies can be minimized by giving plants ample growing space and pruning out all diseased twigs and branches as they appear.

Tar Spot: Yellow spots appear on the leaves of American and English hollies late in the spring. These later turn reddish-brown and finally, by fall, a dark black color.

If at all possible, all diseased leaves should be burned. Make several applications of a broad-spectrum fungicide such as Maneb, Ferbam, or a copper fungicide.

Die-Back and Canker: There are several fungi that cause die-back and canker of holly. These are usually noted as sunken areas on the twigs and stems that cause varying degrees of die-back of young twigs.

Prune and destroy all diseased twigs and begin a spray program with a broad-spectrum fungicide such as Maneb or copper fungicide. Repeat at weekly intervals until all new growth is established.

Junipers

Twig Blight: Juniper twig blight, also known as Phomopsis blight, infects several species of juniper and arborvitae growing in the southeast.

Early disease symptoms consist of yellowing and dying of the scale leaves, especially the tips. This is followed by a progressive die back of the new growth. Small black lesions are formed on the stems and cankers may form on the woody stems especially near a side branch.

In the southeast, twig blight spreads rapidly during periods of rainy, humid weather in the spring and fall. During dry weather, prune as much of the infected branches as possible and destroy.

Research has shown some varieties are more tolerant to twig blight than others.

Protective fungicides should be used frequently to protect new foliage. In most cases applications can be limited to periods in which flushes of new growth occur.

Fungicides shown to be effective in controlling twig blight are copper fungicides (such as copper sulphate), benomyl (Benlate), or Zyban. A spreader sticker should be added to

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Cedar-Apple Rust: In areas where apples and red cedar grow together, the cedars may become covered with hundreds of galls an inch or more in diameter.

Infection occurs on the leaves which stimulates the development of the gall. The second spring after infection, the galls form numerous, long, yellow, tongue-like outgrowths during warm, rainy weather.

The spores from these galls are spread by wind to leaves of nearby apples which may become seriously diseased and fall prematurely. The damage to red cedar is usually not serious.

Photinia

Photinia Leaf Spot: The major problem on photinia (red top) grown in the south is *Entomosporium* leaf spot. The fungus attacks old growth as well as new succulent tissue. The spots occur on both lower and upper surfaces of the leaf and are usually surrounded by a purple to red margin. As they mature these lesions will have a gray center.

Once the disease is well established, it is sometimes very difficult to control. For successful control, a good spray spray program, along with sanitation and pruning, must be carried out.

Diseased plants should be pruned in the spring just before they put on new growth. Prune out as much of the diseased areas as possible. Remove and burn any fallen leaves beneath the plant that may contain disease.

As the leaves begin to unfold, start the spray program and continue on a 10- to 14-day schedule throughout the early part of the growing season.

Effective fungicides against this disease include Maneb, Funginex, Zineb, or copper fungicides.

Roses

Many different disease agents affect roses in the southeast. To adequately control these diseases the landscaper or grower must recognize these diseases and be able to control either by variety selection, sanitation, or chemical control.

Black Spot: As the name implies, the disease's most prominent symptoms are black spots on either side of the leaves. A number of other diseases cause dark spots on the leaves but you can distinguish black spot by the darker color and the fringed borders of the spots.

There is usually a great deal of yellowing and chlorosis associated with the disease. Black spot causes premature leaf drop and may result in severe defoliation. The black spot fungus may weaken plants and make them more susceptible to other disorders.

Although rose varieties may vary in their susceptibility to the fungus, no variety is completely immune. Hybrid teas are generally more susceptible than other varieties.

The first step toward controlling black spot is sanitation. If only a few leaves show symptoms these should be removed and destroyed. Since the fungus overwinters in leaves and canes, remove all diseased leaves from around the plants at the end of the growing season.

If severe pruning does not eradicate the virus, it is best to remove the plant. The virus may be transmitted either by pruning instruments or by insects.

Before new leaves appear in the spring remove and burn old mulch and replace with fresh mulch.

A regular spray program throughout the growing season is usually necessary for control. You may want to use one of several fungicides including Maneb, Moncozeb, benomyl, chlorothalonil, funginex, or Zyban.

All give acceptable control of black spot if applied on weekly intervals during the spring and at two-week intervals during the dry part of the summer.

Once plants become severly infected, the fungicides are of little value other than keeping the disease from spreading. Therefore, regular spraying and thorough coverage are important.

Die-Back and Stem Canker: Die-back and stem canker are really a complex of diseases since they are caused by several different types of fungi. However, identifying these diseases is not of great importance since the control is very much the same for all.

The die-back phase of the disease appears as a black sunken lesion that causes death of the terminals of the cane. Die-back normally gets established through wounds.

When pruning be sure to dip all pruning tools in a 70 percent solution of denatured alcohol or household liquid bleach diluted one part bleach to four parts water.

The fungicides effective in controlling black spot will also control die-back and canker.

Powdery Mildew: A white powdery fungus growth on the surface of leaves, buds, or stems or roses usually indicates powdery mildew. Infection on young leaves may cause curling and sometimes a purple discoloration.

Badly infected flower buds do not open properly. Most sanitation procedures for the control of other rose diseases are also valuable in controlling powdery mildew.

When the disease is a problem, spray dormant plants with commercial lime sulfur (1:15).

During the growing season you can hold powdery mildew in check by spraying with benomyl, cyclohexiimide (Acti-dione), or wettable sulfur. Be sure to add a spreader sticker and follow label directions closely.

Viruses: There are several virus diseases that attack roses in the south. The symptom expressed will depend on the type of virus present.

Some of the mosaic viruses will cause pale to bright yellow spots on the leaves. Occasionally, ring spots will occur or some type of light yellow zig-zag pattern across the leaf. Also, the mosaics will result in a puckering of the younger leaves.

Some of the streak viruses will produce a brown to reddish ring pattern in the leaves. Brown or green rings may also occur on some of the canes.

Generally speaking, the viruses cause little loss of plant vigor. Nor does it affect flower production. The major problem is with discoloration and deformity of the foliage.

Occasionally symptoms may be masked during hot weather. Infected roses should not be used for budding or grafting. Propagators can use heat treatment of root stock to rid the plants of most viruses.

If virus symptoms do occur on established plants, severe pruning may eradicate the virus. If this is not successful, it is best to remove the plant since the virus may be transmitted to healthy plants either by pruning instruments or by insects. **WT&T**

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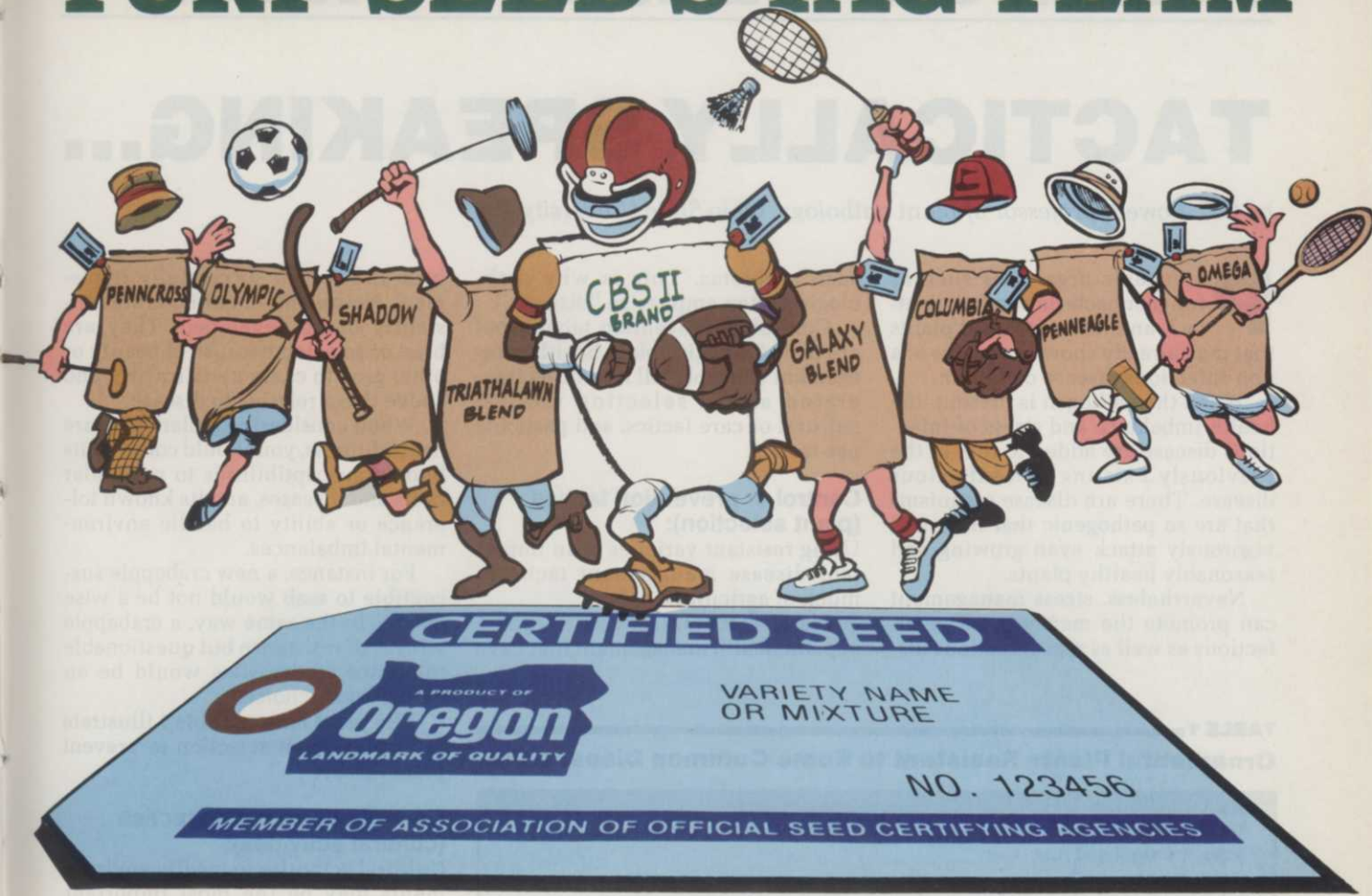

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Circle No. 161 on Reader Inquiry Card

TACTICALLY SPEAKING...

by C.C. Powell, professor of plant pathology, Ohio State University

Pathogenic organisms such as fungi or bacteria commonly attack and infect stressed plants that may already show symptoms of a non-infectious disease condition.

When the pathogen is present, the health imbalance and stress of infectious disease are added to that of the previously existing non-infectious disease. There are disease organisms that are so pathogenic that they will vigorously attack even growing and reasonably healthy plants.

Nevertheless, stress management can promote the management of infectious as well as non-infectious disease problems. This is why pathologists often emphasize "disease."

Control or prevention tactics that are truly "holistic" plant health management concepts fall into three integrated areas: selection tactics, cultural or care tactics, and pesticide use tactics.

Control or prevention tactics (plant selection):

Using resistant varieties is an important disease management tactic in much of agriculture.

Plant selection tactics are a phase of plant health management that have been difficult to successfully implement. New plants or cultivars are constantly being developed. They are bred or selected because of beauty or other growth characteristics over and above those relating to disease.

When considering a plant's future healthfulness, you should consider its known susceptibilities to particular pests and diseases, and its known tolerance or ability to handle environmental imbalances.

For instance, a new crabapple susceptible to scab would not be a wise choice. In the same way, a crabapple with scab resistance but questionable tolerance of dry sites would be an equally poor choice.

The plant lists in Table 1 illustrate the use of plant selection to prevent plant disease.

TABLE 1

Ornamental Plants Resistant to Some Common Diseases[1]

I. FLOWERING CRABAPPLES:

The following cultivars are moderately to highly resistant to powdery mildew, scab, fireblight and rust:

Bob White	Ormiston Roy
Centurian	Red Baron
Coralburst	Red Jade
Donald	Sargent
Donald Wyman	Sentinel
Inglis	Tina
M. halliana 'Parkmanii'	White Angel
M. hupenhensis 'Tea'	White Cascade
Molten Lava	

II. JUNIPERS:

The following varieties are believed to be at lease moderately resistant to twig blight and to rust:

J. chinesis 'Hetzii'	J. horizontalis 'Wiltonii'
J. chinesis "Keteleeri'	J. procumbens
J. communis	J. squamata 'Meyeri'
J. horizontalis 'Douglasii'	J. virginiana 'Tripartita'
J. horizontalis 'Plumosa'	

III. TREES:

The following types are resistant to Verticillium wilt disease:

Ceridophyllum sp.-katsura	Malus spp.-flowering crabapples
Carpinus spp.-hornbeams	Morus sp.-mulberry
Crataegus spp.-hawthorns	Plantanus spp.-plant trees
Gingko biloba-gingko	Quercus spp.-oaks
Gleditsia sp.-honey locusts	Salix spp.-willows
Liquidambar sp.-sweetgum	Sorbus aucuparia-European mountain ash

[1]These lists are not complete. They are intended as guides to assist in plant selection decisions. In some instances, listed plants are susceptible to other disease, insect or environmental problems. Thus, it may not be wise to plant them even though they are resistant to a specific common disease.

Control or prevention tactics (cultural activities):

Cultural activities to modify environments may be the most important ways to manage plant health.

For example the most common reason for poor urban landscape plant health may be bad root-soil environments. Many soil environments, for many reasons, are not able to support the continued growth and functioning of healthy roots. Compacted soils, poor aeration, and nutrient or pH imbalances are stresses often encountered.

The integrated cultural tactics used to correct poor root health are increasing the root-shoot ratio (usually done by pruning back shoots), extensive irrigation and fertilization programs, and/or a restructuring of the root environment.

Restructuring the root environment recently has been emphasized throughout the country, especially where soils tend to be heavy and poorly drained.

Such root environmental improvement has been called *vertical mulching* or *core aerification*.

Vertical mulching may be the most effective root stress management tool practiced. Drilling holes into the soil, around fibrous root growth areas of trees and shrubs, can correct several imbalances and thus is applicable in a variety of situations.

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TABLE 2

Some common diseases of woody ornamentals and fungicides that can be used for control[1]

HOST	DISEASE	FUNGICIDES
Azalea	Blight and dieback	Dithane M-45, FORE, Kocide 101, Zyban, Duosan
Crabapple	Scab	Benlate, Tersan 1991, Daconil 2787, Dithane M-45, FORE, Phaltan, Zyban, Duosan
Dogwood	Leaf Spot	Benlate, Tersan 1991, Daconil 2787, Dithane M-45, FORE, Zyban, Duosan
Hawthorne	Leaf spot	Benlate, Tersan 1991, Daconil 2787, Dithane M-45, FORE, Zyban, Duosan
Juniper	Tip blight	Benlate, Tersan 1991, Dithane M-45, FORE, Zyban, Duosan
Hawthorne	Rust	Bayleton, Daconil 2787, Dithane M-45, FORE, Zyban, Duosan
Lilac	Powdery mildew	Benlate, Tersan 1991, Bayleton, Karathane, Triforine, Zyban, Duosan
Maple	Leaf spot	Dithane M-45, FORE
Pachysandra	Blight	Kocide 101, Dithane M-45, FORE, Zyban, Duosan
Pine	Tip blight	Benlate, Tersan 1991
Pyracantha	Scab	Benlate, Tersan 1991, Daconil 2787, Kocide 101, Zyban, Duosan
Roses	Black spot	Benlate, Tersan 1991, Captan, Daconil 2787, Kocide 101, Dithane M-45, FORE, Phaltan, Triforine, Zyban, Duosan, Manzate 200

[1]This list is presented for information only. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. Registration data derived from labels and from the National Pesticide Information Retrieval Service. Before using any pesticide, read and follow all label directions.

Vertical mulching can improve aeration, improve drainage of excess water, improve penetration of water into dry soils, and provide places for roots to grow and proliferate.

Control or prevention tactics (using pesticides):

Last in integrated control or prevention tactics are those involving pesticides. Remember that pesticides only are effective when pests or infectious diseases are truly the cause of the problem. Table 2 gives some chemicals that are used against common ornamentals diseases.

Pesticides are only effective if several rules are followed.

First, the correct material must be selected. This depends on correct diagnosis and identification of the pathogen or pest.

Second, the chemical must be applied at the proper time of year and frequently enough to protect plant material adequately.

Third, pesticides must be applied properly over plant surfaces.

The rules depend on your making correct decisions based on correct knowledge.

The following chemicals are commonly used for control of diseases of trees and ornamentals:

Benomyl (Benlate, Tersan 1991)

This systemic fungicide is effective against apple scab, powdery mildews, botrytis, anthracnose, and other leafspots commonly seen on landscape plants. A good spreader-sticker is necessary for best results from sprays.

Bordeaux Mixture (Bordo-Mix)

This older copper-based fungicide controls a broad range of activity. It is labeled for control of many leaf spots and blights on all ornamentals. Use of Bordeaux mixture leaves a residue and may be phytotoxic to some crops.

Captan (Orthocide)

This broad-spectrum fungicide has limited registrations for use on ornamentals. It is effective on certain foliar diseases.

Chlorothalonil (Daconil 2787)

Daconil 2787 is quite good for control of leaf spotting fungi on ornamentals. It is commonly sold as a flowable formulation.

Cupric hydroxide (Kocide 101, Kocide 404)

These are "fixed copper" fungicides, quite safe to users but potentially damaging to plants. They have a wide range of activity against many leaf spots and blights.

Cycloheximide (Actidione-PM)

This antibiotic material is effective for powdery mildew and rusts but may cause plant injury, expecially spotting of new foliage on roses.

Dodemorph (Milban)

This EC fungicide is currently registered for powdery mildew control on a few ornamentals. Make sure to wear eye protection when using this restricted-use material. Do not mix Milban with other chemicals in the spray tank.

Fenarimol (Rubigan)

Fenarimol is a locally-systemic fungicide for the prevention or therapeutic control of powdery mildew in commercially-grown field or greenhouse roses, and in a few other field-grown ornamental crops. A 12.5 percent emulsifiable concentrate, it can be tank mixed with properly labeled wettable powder fungicides when needed. To avoid growth effects (phytotoxicity), use the lower end of dosage ranges given on the label whenever possible. Lower dosages are also recommended under cool, foggy, or overcast conditions.

Ferbam

This broad-spectrum carbamate fungicide, registered for control of several leaf spots, rusts and blights, is somewhat difficult to wet. The black color may leave a conspicuous residue, especially on flowers.

Folpet (Phaltan)

Folpet, a close relative of Captan, provides good control of certain leaf spots on ornamentals.

Iprodione (Chipco 26019)

Many ornamentals can be sprayed with this 50 percent WP fungicide for control of botrytis blights and a few other diseases.

Mancozeb (FORE, Dithane M-45, Manzate 200)

This is a coordination product of maneb fungicide and a zinc salt, registered for the control of leaf spots and blights. The product is a broad-spectrum material but does leave a heavy

continued on page 78

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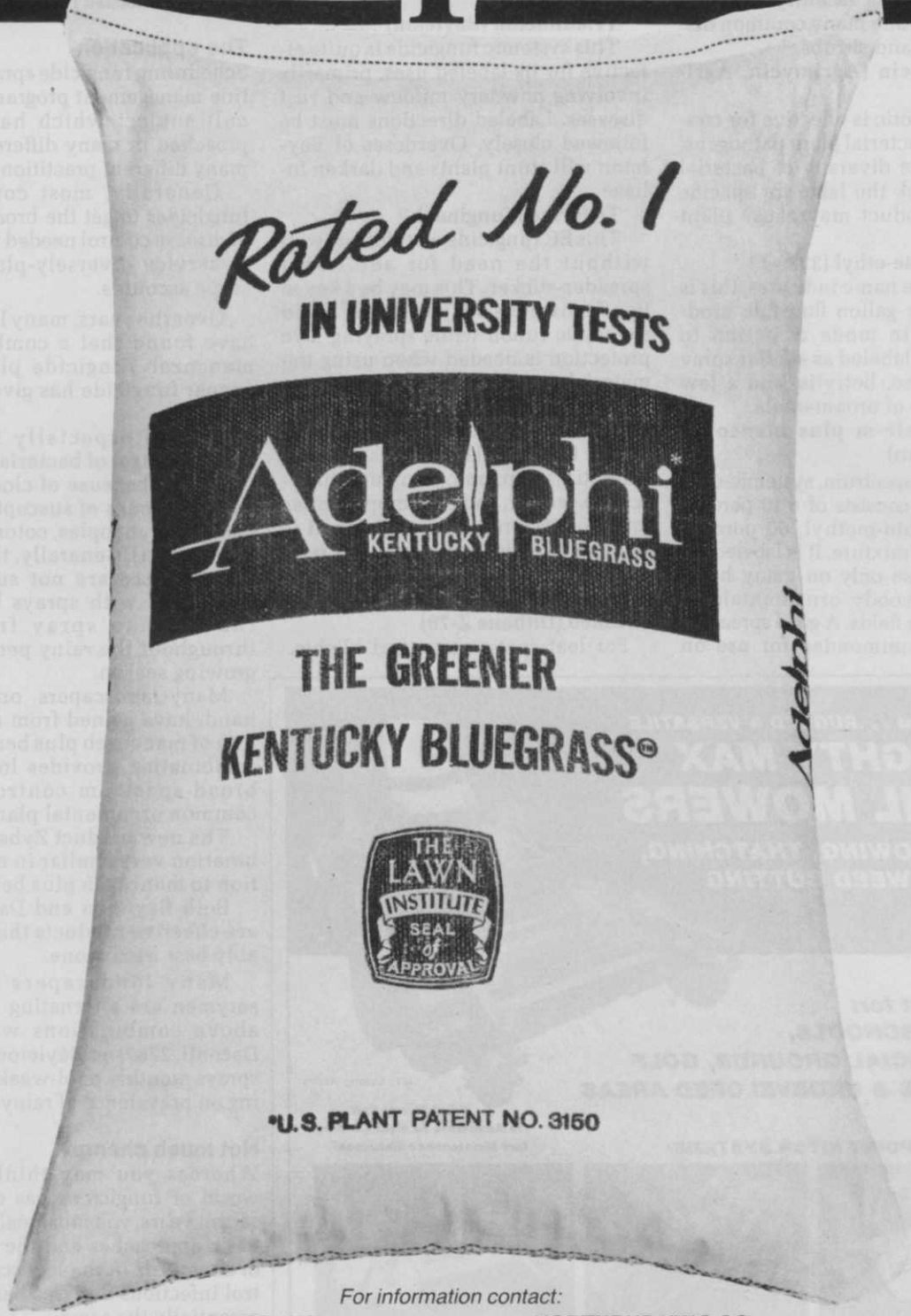

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residue. The label on the wettable powder mancozeb sold as FORE and Dithane M-45 has recently been expanded to include many common diseases of trees and shrubs.

Streptomycin (Agrimycin, Agristrep)

This antibiotic is effective for control of some bacterial plant pathogens. Because of the diversity of bacterial diseases, check the label for specific uses. The product may cause plant damage.

Thiophanate-ethyl (3336-F)

As the trade name indicates, this is a 4-pound per gallon flowable product. Similar in mode of action to benomyl, it is labeled as a foliar spray for anthracnose, botrytis, and a few other diseases of ornamentals.

Thiophanate-m plus mancozeb (Zyban, Duosan)

This broad-spectrum, systemic-contact fungicide consists of a 15 percent WP thiophanate-methyl, 60 percent WP mancozeb mixture. It is labeled for professional use only on many herbaceous and woody ornamentals in greenhouses or fields. A good spreader-sticker is recommended for use on hard-to-wet foliage. You may not want to use the product on French Marigold or Gloxinia.

Triadimefon (Bayleton)

This systemic fungicide is quite effective for its labeled uses, primarily involving powdery mildew and rust diseases. Labeled directions must be followed closely. Overdoses of Bayleton will stunt plants and darken foliage.

Triforine (Funginex)

This EC fungicide wets foliage well without the need for additional spreader-sticker. This may be a key to its effectiveness but you should avoid excessive runoff while spraying. Eye protection is needed when using the material.

Vinclozolin (Ornalin)

This 50 percent WP fungicide is effective for control of Botrytis spp. and Sclerotinia spp. on ornamental herbaceous, woody, and buld crop. Similar in action to iprodione fungicide, it is said not to leave as noticeable a residue. It is labeled for professional use only.

Zineb (Dithane Z-78)

For leaf spots, rusts, and blights, use this product a a foliar spray. It should be reapplied every seven days until the disease is under control.

The application

Scheduling fungicide sprays into routine management programs is a difficult subject which has been approached in many different ways by many different practitioners.

Generally, most combine two fungicides to get the broad spectrum of disease control needed when trying to service diversely-planted landscape accounts.

Over the years, many landscapers have found that a combination of mancozeb fungicide plus a fixed copper fungicide has given good results.

This is especially important where control of bacterial fire blight is needed because of close spacings of large blocks of susceptible plants (such as crabapples, cotoneasters, or pyracantha). Generally, these bacterial diseases are not successfully controlled with sprays because of the need to spray frequently throughout the rainy periods of the growing season.

Many landscapers, on the other hand, have gained from a combination of mancozeb plus benomyl. The combination provides long lasting, broad-spectrum control of most common ornamental plant diseases.

The new product Zyban is a combination very similar in mode of action to mancozeb plus benomyl.

Both Bayleton and Daconil 2787 are effective products that are probably best used alone.

Many landscapers and nurserymen are alternating one of the above combinations with either Daconil 2787 or Bayleton, applying sprays monthly or bi-weekly depending on prevalence of rainy weather.

Not much change

Whereas you may think that the world of fungicides has changed in recent years, you must realize that the basic approaches and the usefulness of chemicals in the landscape to control infectious diseases has remained essentially the same.

Preventive spray programs with proper intervals between applications are the secrets to successful disease management.

Obtain labels of the new products, study them, and see how they will fit into your disease management program. **WT&T**

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THE RIGHT SPRUCE

The spruce varieties can be a unique feature to the commercial landscape providing you do your homework. Not all spruce is right for all areas.

by Douglas J. Chapman

Spruce can be a unique asset to the commercial and home landscapes if all factors—environmental tolerance, soil requirements, and insects and diseases—are considered.

Picea, which adapt best to the Northeast and Great Lakes region, include Norway, Engelmann, White, Colorado, Serbian, and Oriental Spruce. Colorado Spruce, due to overplanting and disease (for example, Cytospora Canker), should be used only sparingly. Each of these conifers has a preferred niche in the landscape.

Norway Spruce

Norway Spruce (*Picea abies*) is a European native, the most important conifer species for the European landscape and timber industry. It grows over a wide range of soil conditions, preferring cool, well-drained soils.

It needs a high humidity, thus is adapted particularly well for the Great Lakes, New York, and New England areas. Norway Spruce is particularly cold hardy, reportedly tolerant of temperatures down to minus 72 degrees F.

When young, it has a somewhat stiff, formal habit of growth, becoming a graceful, upright-arching tree at maturity. *Picea abies* effectively reaches 60 feet in height with a spread of 20 to 30 feet. There are reports of Norway Spruce, under native conditions, growing considerably larger, but one must know effective landscape height, not ultimate height, in native conditions.

Norway Spruce has been cultivated and improved selections made over such a long time period that many unique cultivars exist.

Two particularly outstanding cultivars include *Picea abies* 'Maxwellii,' a dwarf rounded plant and *Picea abies* 'Nidiformis' (Nest Spruce), a plant which reaches three to six feet in height and spread. Certainly, Norway Spruce is high on the list of desirable landscape species.

Englemann Spruce

Engelmann Spruce (*Picea engelmannii*) is native to the western United States. It is particularly hardy, tolerant of temperatures to minus 90 degrees F. Engelmann, a rather formal, dense plant, serves as an outstanding ornamental. It reaches 40 to 50 feet in height with a 10 to 20 foot width.

This plant grows best in extremely well-drained soils but does require frequent rain or a high water table. Among the spruce, it is probably the most resistant to sulfur-dioxide. Engelmann Spruce is difficult to obtain but should be listed as one of the truly outstanding ornamental spruce types.

White Spruce

White Spruce (*Picea glauca*) is best suited to northern areas, specifically northern Michigan, New England, and Ontario. It thrives in cool, moist soils, adapting to a wide range of pH from 5 to 7.5. It is resistant to chlorides (salts) and is tolerant of sun or shade conditions. These features make it particularly well suited to natural landscapes throughout the northeast and northcentral U.S.

Colorado Spruce, due to over-planting and disease (for example, Cytospora Canker), should be used only sparingly.

Its habit is rather loose and open—40 to 50 feet in height at maturity with a spread of 15 to 20 feet.

White Spruce is uniquely suited to commercial or park landscapes. It is particularly tolerant of many urban problems such as low-oxygen or heavy soils, and varied light conditions.

Colorado Spruce

Colorado Spruce (*Picea pungens*) thrives over a wide range of conditions. Its rather formal, dense habit, reaching 40 to 60 feet with a spread of 20 to 30 feet in the Great Lakes region.

It is tolerant of clay to droughty, well-drained soils.

Picea pungens is particularly subject to desiccation during the winter months. Although it is the most readily-available spruce in the trade, it is also the most susceptible to Cytospora Canker.

When Colorado Spruce reaches 25 to 30 years of age, it frequently contracts *Cytospora kunzei* and declines. Due to this disease problem, the use of Colorado Spruce should be reduced dramatically.

Serbian Spruce

Serbian Spruce (*Picea omorika*) in the landscape is probably the most notable specimen spruce. It reaches 50 to 60 feet in height and has a spread between 15 and 20 feet. It thrives in well-drained soils but adapts to a wide range of soil conditions.

It is quite formal and is particularly well suited to either the home or commercial landscape. Of all the spruce, it seems the least susceptible to Cytospora Canker which should encourage its use.

Oriental Spruce

Oriental Spruce (*Picea orientalis*) is a truly outstanding spruce with a very dense habit. It reaches 50 to 60 feet in height with a 20 to 30 foot spread.

It is tolerant to a wide range of soil conditions but is not dependably hardy, thus should be grown only in areas such as southern Ontario, southern New England States, southern New York, Ohio, Indiana, and Illinois. Its color is an outstanding lime green.

Oriental Spruce is not a host to many catastrophic insect and disease problems.

As a landscape tree, Oriental Spruce is truly unique. *Picea orientalis* certainly has a place throughout the southern Northeast and middle Atlantic States. It is, however, the least cold temperature hardy of all the spruce discussed above.

Disease controls

There are numerous insect and disease problems which can affect the spruce types but probably the most single catastrophic problem is

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Cytospora Canker (*Cytospora kunzei*).

You can control this weak pathogen by pruning out cankered branches and fertilizations.

The symptoms include single branches thinning and dying with white resinous ooze appearing on the branch or trunk.

There is no presently-known fungicide that is effective in control of the disease. Laemmlen reported one way to reduce the chance for infection would be not to prune during the spring months.

His studies suggested the major spore responsible for primary innoculation is ascospore. These ascospores are released during the spring months, thus partial control might be to avoid spring pruning.

A total review of the conditions that encourage Cytospora Canker of spruce shows it is a weak pathogen and, in fact, a disease of older, stressed, or injured trees. Further, some spruce are more resistant to this particular disease.

Knowing this information, there are several things we can do. First, one should be alerted to relative resistance of species. Spruce ranked from least to most susceptible are: Serbian, Engelmann, Oriental, Norway, White, and Colorado Spruce.

This simple listing is one good reason why we should reduce the number of Colorado Spruce used in the landscape.

For many years Cytospora Canker has been known to be a disease of weakened or stressed trees.

Stress

Recently, Schoeneweiss reported drought to be one possible reason for increased susceptibility, but he further stated at a seminar held at Michigan State University that the key for infection and ultimately, canker formation, is stress.

Therefore, frequent watering and fertilizing would help reduce the chances of this infection. Furthermore, since ascospores are released during the spring, spruce pruning should be de-emphasized during the spring months.

Lastly, as spruce trees become older and slow down in vigor, they are more susceptible to infection.

There are many factors to consider when using spruce: susceptibility to insects and diseases; tolerance to chlorides; tolerance to wet or dry soils; and climatic adaption.

Relative susceptibility to Cytospora Canker is the major pathogenic consideration.

One should keep in mind that diversity, no spring pruning, and use of all spruce types in the landscape reduces the chances of any one species being devastated.

When considering diseases and environmental tolerance, each spruce has a niche in the landscape. **WT&T**

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Schoeneweiss, D.G. 1983. Drought Predisposition to Cytospora Canker on Blue Spruce. Plant Disease 67:383.

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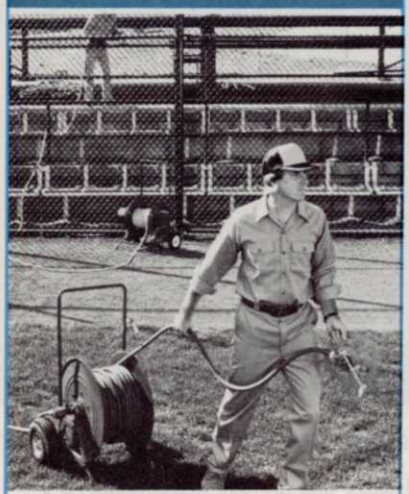

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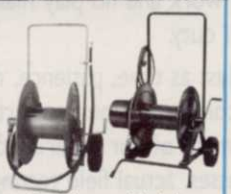

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Circle No. 149 on Reader Inquiry Card

TECHNICAL PERFECTION VS. COST

by Rudd McGary and Ed Wandtke

Letting the client know what can be done within the budget, coupled with your technical knowledge, are the keys to maintaining good client relationships.

The greens committee can't believe that the greens don't look like billiard tables with the money they allocate to you. The homeowner can't understand why his lawn doesn't look beautiful in the early spring. The apartment complex manager doesn't understand why you didn't spray preemergent materials on his property.

Do any of these sound familiar?

They are classic issues of technical perfection vs. cost.

Given enough money, almost anything is possible. Since most organizations don't have unlimited budgets, we can forget about the concept of throwing money at a problem to solve it.

In the lawn service industries the constant job of the superintendent is to achieve the best possible results within the constraints of a fixed operating budget.

There are some keys to doing this and they rest with the people who use the service.

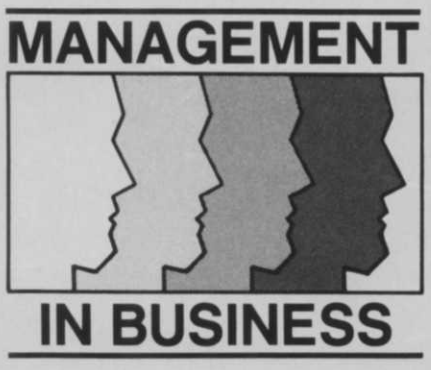
1. Expectations

"What do the people who are getting the service want?" is the question that starts the process.

Do they want perfectly dressed greens, a greener lawn, a better looking landscaping job?

What is the key for their decision to say yes to your services? Unless you know what they want you can't design an agronomic program that makes any financial sense.

Wandtke and McGary are owners of All-Green Management Associates, Columbus, Ohio.



2. Expectations vs. reality

Many people have no idea of the costs involved in lawn services. In particular golf course committees are seldom made up of people with any type of agronomic background.

Their expectations must be addressed with factual information about the costs required for technical perfection.

With a given budget, you must be able to explain what is possible and impossible to obtain in terms of final results...explain the options.

Unless you're working for an academic institution which has enormous grant funding, you won't be able to give technical perfection. (Being non-profit doesn't mean that you don't have to watch your budget.)

3. Options

There must be options offered to keep everyone involved happy. With a given budget, you must be able to explain what is possible and impossible to obtain in terms of final results. You may want to hold a negotiating session where options are explained.

Certain results are preferable to others and they are the most important options for the buyer of the services.

4. Trade-offs

The general result of any lawn service organization is an impressive turf. There are going to have to be trade-offs to come up with the best possible looking turf and these are ones made on agronomic information.

Making the turf look acceptable to the end user is the key. You may know that the final result isn't the best possible but you also have to trade that off with the budget constraints within which you're working.

Working within the cost

The keys to technical perfection vs. cost revolve around your agronomic background, your programs for the turf, and the results desired by the people who pay the bills, the consumers of your services.

In the chemical lawn care arena the consumers generally don't care about what it is you do; they want a green lawn.

With golf courses, the expectations may be higher but the key is to get a clear picture of what the committee wants.

You should be prepared to explain what you can do within the budget that is being proposed.

In the maintenance end, you must make clear the services offered, particularly if you are in a bid situation.

Technical perfection vs. cost comes down to a very simple equation: knowledge of the agronomic possibilities together with the results expected by the end user are the two keys.

Letting the people know what can be done within the parameters of cost comes down to putting these two variables together in such a way that you have come the closest you can to technical perfection while keeping the cost acceptable. **WT&T**

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Circle No. 145 on Reader Inquiry Card

Bob Sowers (right) and Rhone-Poulenc turf products sales specialist Chuck McGilloway discuss disease control on one of Sunnybrook's immaculate greens.

SMALL IS BEAUTIFUL

Sunnybrook super Bob Sowers makes the most out of a modest operating budget, keeping the course maintained to tournament standards. Though difficult, it's not an impossible task.

Many superintendents of private, limited-membership golf courses have at least two things in common, a membership that demands first-class playing conditions and a modest operating budget. Sunnybrook Golf Club in Plymouth Meeting, Pa., with a membership that holds steadily year after year at about 280, is no exception.

Bob Sowers, superintendent at Sunnybrook since 1970, has learned by necessity to prudently manage his budget and his course without compromising the quality of play at the Club.

Designed by William Gordon and constructed in 1954, the 6,800-yard par 72 course gets a meager 12,000 rounds of play per year. However, Sunnybrook annually hosts the U.S. Women's Amateur and U.S. Senior Amateur tournaments. So despite the relatively light daily play, Sowers, his assistant Fred Ammon and a fulltime crew of two men must keep Sunnybrook maintained to tournament standards.

When it was built, Sunnybrook was surrounded by farms and woods. During the past 15 years, the rolling hills of Montgomery County, which adjoins Philadelphia, have been sprouting homes instead of crops. Sunnybrook was carved out of the heavy clay soils characteristic of southeastern Pennsylvania. Unlike most soils in the Northeast which are in the acid range, the soil at Sunnybrook is slightly alkaline because the course abuts a limestone quarry.

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Ford 1000 Series tractors give you powerful working capacity with compact-size maneuverability for a wide range of mowing, loading and site preparation needs.

There are six models, from 13 to 32 engine horsepower. These hard-working diesels come standard with 540 rpm PTO, 10 or 12-speed transmission, full-time live hydraulics, and a Category I three-point hitch.

Options include front-wheel drive. Hydrostatic or synchronized manual shuttle transmission, depending on model. Creeper speeds. Turf tires, and more. Over 50 matching attachments and implements are available.

Ford commercial mowers

These mowers are designed for grounds maintenance professionals with sunup to sundown work schedules.

Top of the line is a 16-horsepower, 5-forward speed workhorse that cuts a 48-inch swath, with turn-on-a-dime maneuverability for mowing around trees, shrubs and other obstacles. The optional sulky provides sit-down comfort for mowing large lawn and turf areas. A twin-cylinder Briggs & Stratton Industrial/Commerical engine delivers plenty of power to take heavy growth in stride.

For mowing and trimming smaller areas, Ford offers two rear-discharge 21-inch commercial mowers, one self-propelled and one push-type.

Ford mid-range tractors

Ford Series 10 tractors are engineered for excellent performance, ease of operation and all-around versatility.

Choose from ten diesel models from 34.3 to 86 maximum net engine horsepower. Standard equipment includes 3-point hitch, independent PTO, and power-assist steering on most models.

Options include front-wheel drive, synchromesh transmission, turf tires, and more.

Ford also offers 40.5 and 60 maximum net horsepower low-center-of-gravity Series 10 tractors (shown below) designed to work on hilly and rolling terrain.

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Ford also offers many other attachments for grounds maintenance work: rotary cutters, flail mowers, front and rear blades, landscape rakes, scoops, posthole diggers and more. See your Ford Tractor dealer for complete information.

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Circle No. 126 on Reader Inquiry Card

FORD TRACTORS

Ford

course from the quarry," says Sowers. "To bring the pH down to 6.0 I apply about 65 pounds per acre of sulfur each year."

Water, fertility

The clay soil at Sunnybrook drains poorly, so water management is one of Sowers' biggest concerns. "The worst possible situation is to have our members play through water," he says. Fortunately, the course's drainage system does a fairly good job. On the other hand, summer dry spells are not uncommon; throughout the season Sowers frequently uses a soil probe to keep track of soil moisture levels.

Sowers believes that most courses are overwatered. By irrigating only when it's necessary, Sowers controls his equipment operating and maintenance expenses, and reduces the turf problems associated with too much soil moisture.

"I keep water and fertility levels to the minimum required to maintain healthy turf so that thatch doesn't get out of control," he explains.

The tees and greens at Sunnybrook receive two 2 pounds per 1,000 square feet applications of nitrogen annually, and the fairways get one pound per 1,000 square feet of nitrogen twice each year. In addition, Sowers fertilizes the turf once late in the season to build up carbohydrate reserves and to get a quick green-up in the spring.

Bob Sowers believes that the key to thatch control is keeping water and fertilizer to the minimum required.

Thatch control

Thatch control is an important concern for Sowers. Not only does heavy thatch affect golf play, but it ties up vital nutrients and harbors disease organisms.

To control thatch, Sowers verticle mows the fairways once per week during the growing season and aerifies twice per year. He generally keeps the fairways cut to ½-inch, tees to ⅜-inch and greens to 5/32-inch, but during the mid-summer he'll raise the cutting height slightly if the weather remains hot and dry for any length of time.

Sowers, a Penn State graduate with a degree in agronomy, prefers the perennial grasses because they require less maintenance and water than annual bluegrass. Sunnybrook is about 85 percent bentgrass. Sowers has a constant battle with poa annua and clover, which tend to spread if the bentgrass is stressed for any reason.

Spreading it out

The annual budget at Sunnybrook permits Sowers only a limited amount of money for construction, so major projects such as the renovation of Sunnybrook's bunkers are spread over several years. The most recent major project was the construction of a new equipment building in 1981. Sowers is pleased with the spacious new building which houses his office and provides plenty of space for equipment maintenance and storage.

During the past couple of years, Sowers has had to deal with two problems affecting Sunnybrook's trees that superintendents in other parts of the country don't commonly encounter: gypsy moths and Diplodia tip blight.

Controlling a heavy infestation of leaf-munching gypsy moth caterpillers in 1982 was fairly straightforward. Sowers hired a local aerial applicator who used a helicopter to make one application of carbaryl. He doesn't expect that

The view of the 16th hole fairway at Sunnybrook shows well-groomed predominantly bentgrass turf that Sowers works hard to maintain.

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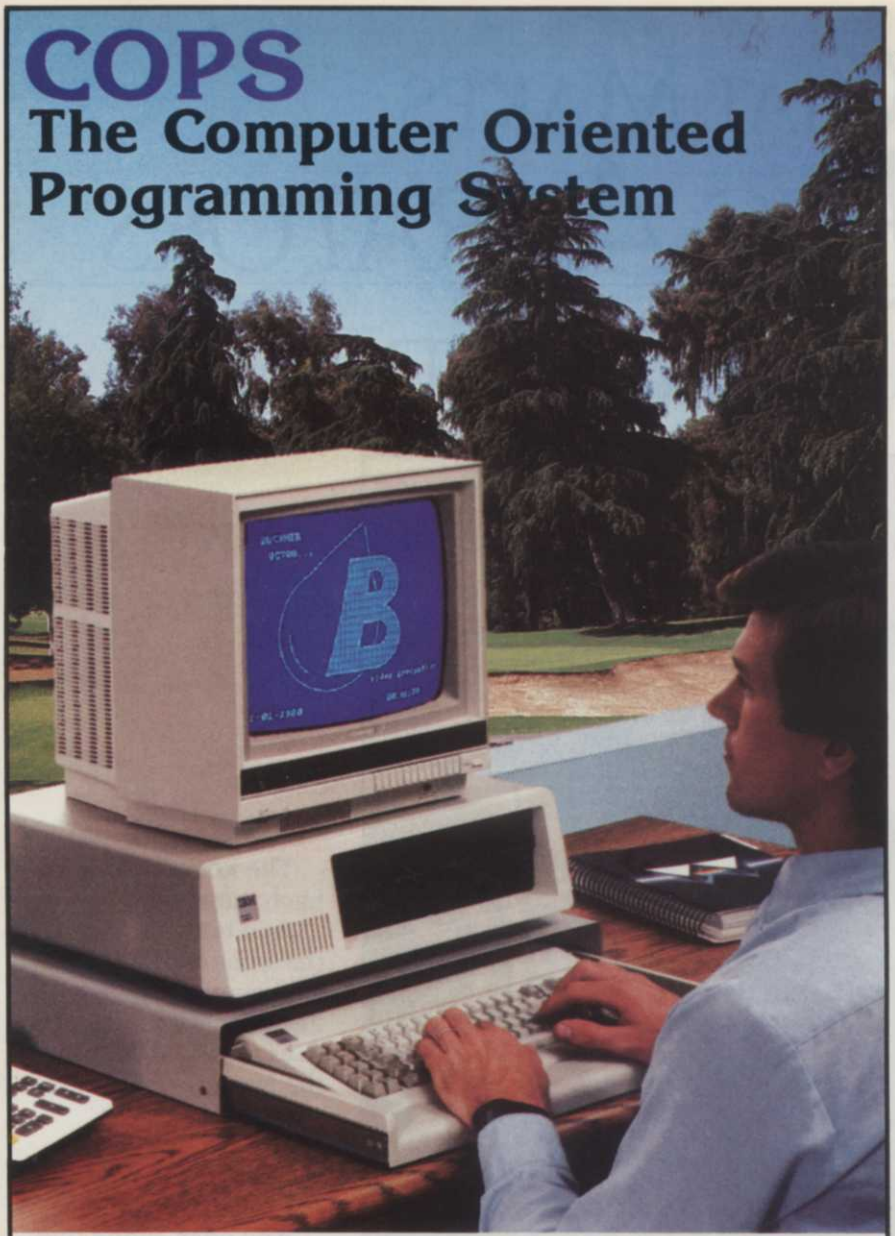

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he'll need to repeat the application, but he plans to carefully monitor caterpiller populations this spring.

The second problem was not so easy to diagnose or control. With the help of Penn State Extension Service, Sowers discovered that Diplodia tip blight was responsible for the death of 24 Austrian and red pines, and the decline of 122 other conifers on the heavily wooded course. This spring, Sowers plans to follow Penn State's recommendation to make three applications of benomyl to halt the disease.

Disease control

In addition to carefully managed fertility and water management programs, Sowers feels that a regular turf disease prevention and treatment program is essential to maintaining the turf quality at Sunnybrook.

"Bentgrass is more prone to diseases than most species," Sowers says, "so a good fungicide is a necessity. Dollar spot is my biggest disease problem, and it was particularly bad this past July because of the high temperatures.

"Our board of directors approved the purchase of Chipco 26019, based on a photograph I had taken of one fairway where I had tried the product," he says. "One of my crew accidently missed a strip down the middle of a fairway while he was spraying. The contrast between the untreated area infested with dollar spot and the lush treated grass down the sides convinced the board."

In 1985, Sowers' first fungicide application was on June 10. He treated greens and tees every 14 to 21 days and fairways every 21 to 28 for the remainder of the season.

"With the cost factors, such as labor and equipment that you face today, you can't afford to apply a fungicide every seven days," says Sowers.

Sowers believes that getting out on the course and playing golf, as he does regularly, has helped him learn to manage his course better. "Many superintendents look at the course from a maintenance point of view rather than from the player's point of view," he explains. Bob Sowers has managed to combine the best of both worlds at Sunnybrook. **WT&T**

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by Harold Vaubel

Super finds 'Instant Spring' with grass paint

During winter days, many of us begin to dream of an "instant spring" which would bring to life a seemingly eternal barren landscape.

Some superintendents are no longer dreaming. Some are now experiencing "instant spring."

Instant Spring can't manipulate the date of the vernal equinox, bring warm weather sooner, or shift the polar ice caps around so northern climes bask in equatorial sunshine. The Instant Spring product, however—it's a grass paint of sorts—can at least turn things greener sooner.

Some major U.S. golf courses, particularly in the West where people keep a sharp eye on water use, have adopted the earlier-than-seasonal green.

The use of Instant Spring makes sense for reasons of conservation and economics as well as wintertime aesthetics. It lessens the need for intensive wintertime irrigation.

For over 10 years, I have watched this "Greening of the Sun Belt" phenomenon as I managed or helped manage courses in the Southwest, beginning my career as an assistant golf course superintendent at the Goodyear Golf and Country Club in Litchfield Park, Ariz.

I held the same position at the Tucson National Golf Club, then moved up to superintendent positions at the Albuquerque Country Club in New Mexico and the Desert Forest Golf Club in Carefree, Ariz. I am currently superintendent at TPC Starpass in Tucson.

During the years I've had the chance to peruse the "greening by man" effort and it's certainly worthwhile in aesthetic terms.

Even regions where water is plentiful and applied liberally still experience brown, dry grass during midwinter. Use of Instant Spring makes sense in most places if the goal is to keep things looking at least a little greener than Mother Nature herself would provide during wintertime's dormancy.

What golfer after all, is not drawn to the sport partially—if not mainly—because of the chance to exist for a time in a "world of green?"

To achieve that green using Instant Spring, you simply paint the grass.

Wellborn Paint Manufacturing Co. of Albuquerque developed the product which reflects two great interests of company president Fred Wellborn: painting and golf.

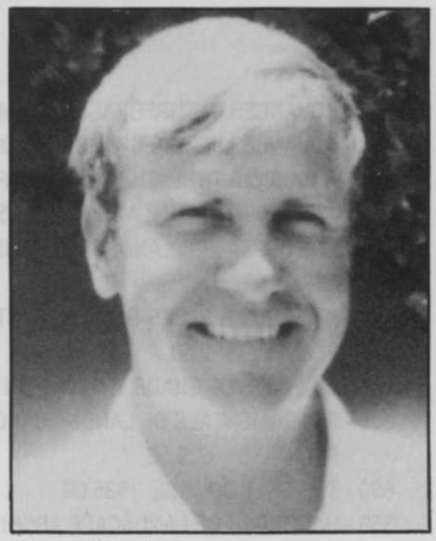
He started his paint company in the middle of the Sun Belt—Albuquerque—in 1947 and built the company into a large regional manufacturer of paints and coatings with the help of chemical engineers, tinters, and energetic marketers.

Many Wellborn products are formulated specially for the Southwestern climate, with its long, hot summers, intense sunshine, low humidity, and occasional winter blizzards.

Wellborn found that the Sun Belt offered many days per year of good golfing weather. In fact New Mexico receives sunshine seven of every 10 winter days. Only the green was missing.

I was familiar with Wellborn and the idea of painting golf course fairways during the early 1970s. My first experience with the product was at Desert Forest Golf Club, one of *Golf Digest's* top 100 courses, in 1981.

Though I've seen applications done various ways, I use two coats with a 20:1 water to acrylic base ratio in the first coat, and a 30:1 ratio in the second.



Harold Vaubel

As always, application ratio varies with grass type and density, and region of the country.

I don't spray everywhere—just the fairway area. We mix ferrous sulfate in before spraying at a 10 lbs. per acre rate. The use of ferrous sulfate gives a better defined area and a more visually-pleasing result.

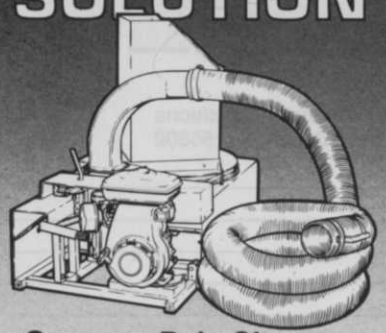
I believe the use of paint products in the winter, whether under the Instant Spring label or not, has been a visual plus.

Initially, the desire for as much year-round greenery as possible came mainly from the golfers but superintendents who have gone this route have found some other benefits as well. In my own case, I found some unexpected positive results:

- A better playing surface. Rye-grass is often used to keep things green for a longer period of time. However, it's a rough, uneven playing surface. By using other grasses that go dormant sooner than rye, we can have a smoother surface.
- Cost savings. Products which bring spring to the stage earlier than the calendar does also help out financially.

Compare the cost of seeding and maintaining rye-grass, which I estimate can run as much as $900 to $1,000 an acre, with the $100 an acre it takes to apply two coats of "Instant Spring" at the application ratios I previously mentioned.

THE MULCHING SOLUTION



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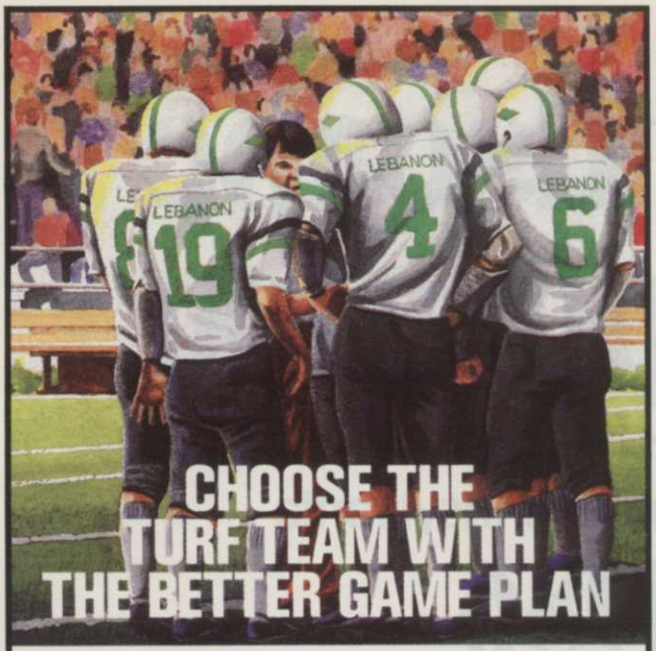

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Circle No. 137 on Reader Inquiry Card

PROBLEM SOLVERS

by **Balakrishna Rao**, Ph.D.

Pine problems

Problem: *Well-established, large Scots pine trees are turning brown and dying, and we are unable to find any evidence of insect or disease problems. Do you have any idea what the problem might be? If so, I would appreciate your comments to help save these and other pines. (Ohio)*

Solution: Since you were unable to see any disease or pest problems, I suspect the possibility of pinewood nematode causing wilt problems. Scots pine (*Pinus sylvestris*) are reportedly very susceptible to this pest.

For positive identification, send plant tissue samples to a diagnostic clinic like Ohio State University, which is equipped to perform nematode assay. Generally, 6-inch long, 2- to 3-inch diameter branches close to the trunk are sufficient to determine the nematode activity.

At the present time, there is no chemical control for this wilt disorder. Since nematodes are reported to be spread by insects like pine sawyer beetles, controlling the insect activity might help in managing the nematode problem. Dead and dying trees should be cut and removed to prevent breeding sites for insect vectors. Disinfect pruning tools before using them on healthy trees, since the nematode can be transferred through wounds.

Although the importance of fertilization with this problem is not fully understood, extension personnel do recommend maintaining good cultural practices and a good fertilization program. Reports also suggest that controlling needlecast and pine tip blight diseases may aid in minimizing wilt problems.

Managing black locust plants

Problem: *What chemicals and methods can be used to control black locust plants growing near highways or slopes? The plants are about 2- to 4-inches in diameter and growing rapidly. (Chicago)*

Solution: Black locust plants can be effectively managed by the use of chemicals through foliar sprays, basal trunk treatments, or stump treatments.

For foliar sprays, Garlon 3A plus 2,4-D or dicamba plus 2,4-D combinations can be used. Spraying should be sufficient to wet the leaf surface rather than to the point of runoff. Since these treatments will discolor and show "burn out," this method may not be aesthetically acceptable in many areas.

Another approach is to do basal trunk treatments. Apply combinations of Garlon plus 2,4-D ester or dicamba plus 2,4-D ester formulations on the trunks about 18 inches above the ground level.

In places where the above methods are not acceptable or feasible, consider using the stump treatment methods. Reports indicate that cutting back the black locust plants to ground level first and then immediately applying Tordon to the cambium layer will provide adequate control. Read and follow the label specifications for best results.

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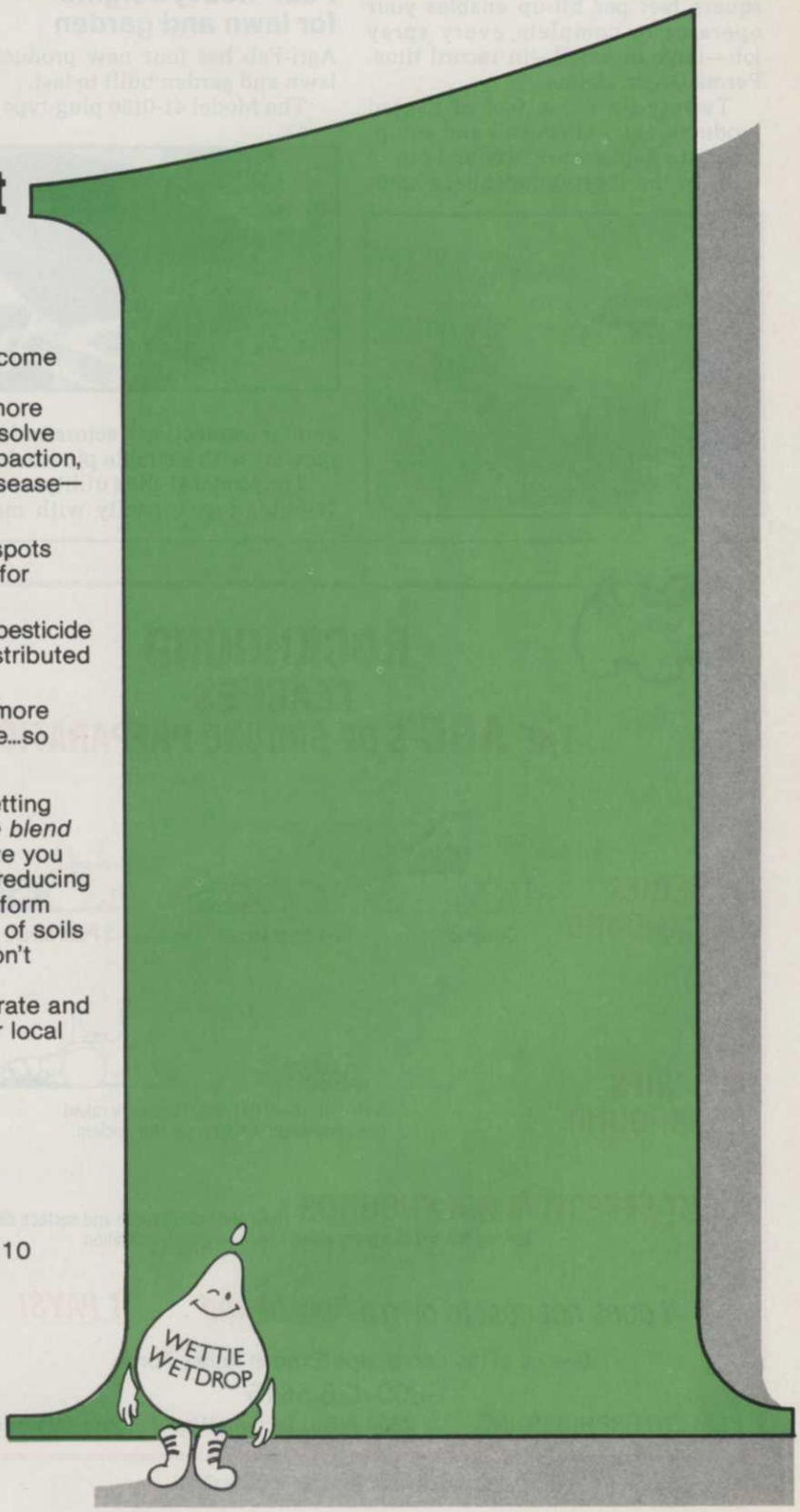

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Circle No. 105 on Reader Inquiry Card

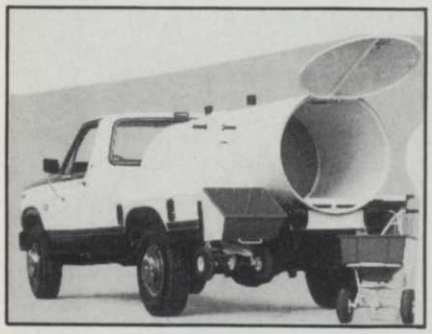
Low volume rig from Perma-Green

Perma-Green Supreme of Merrillville, Ind. has introduced the GL3001, a low-volume spray rig.

A production capacity of 300,000 square feet per fill-up enables your operator to complete every spray job—large or small—in record time, Perma Green claims.

Twenty-six cubic feet of bagged products, extra chemicals and equipment are kept secure, dry and out of sight in the locking hatchback compartment. A gas spring lifts and holds the latch, and built-in brackets secure the spreaders.

Circle No. 190 on Reader Inquiry Card



Four 'heavyweights' for lawn and garden

Agri-Fab has four new products for lawn and garden built to last.

The Model 41-0166 plug-type lawn aerator connects to tractors and riding mowers with a simple pin hitch.

The Model 41-0184 utility cart has a 17-cubic foot capacity with manual lift for dunping the big hauling jobs.

The Model 41-0187 broadcast spreader (shown here) holds up to 160 pounds of granulated fertilizers, seed, sand or ice melters.

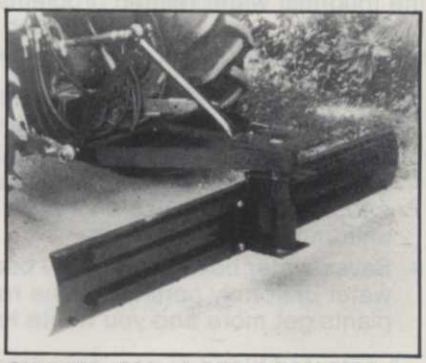
And the Model 41-0188 5 hp lawn vacuum and 10 cubic foot utility cart hold up to 32 cubic feet of clippings and leaves.

Circle No. 191 on Reader Inquiry Card

Blue River shows rear-mounted blades

Rear-mounted blades from Blue River Equipment ready any tractor to level, scrape, fill, grade, cast, or plow snow.

These blades can be mounted on any standard three-point hitch and come in four- to eight-foot widths. They offer full rotation for a wide range of blade angles. Some models may be offset 12 inches to either side or tilted 15 degrees for ditching.



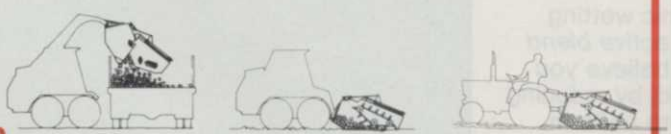
Circle No. 192 on Reader Inquiry Card

Excel introduces new Hustler Mower

Excel Industries' new Hustler 251 is a dual hydrostatic 18-hp, 51-inch utility-sized mower with twin-lever steering, true zero-degree turning radius, forward-deck design, rear discharge, and vacuum cutting action. An optional Bac-pac grass catcher fits between the mower's rear wheels. Hustler offers a full two-year limited warranty on the 251 model.

Circle No. 193 on Reader Inquiry Card

ROCKHOUND
TEACHES
THE ABC'S OF GROUND PREPARATION



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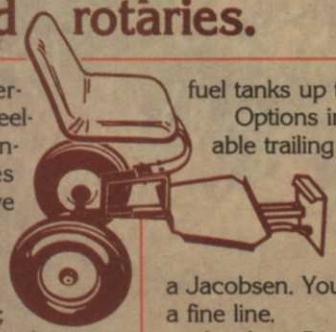
These rugged, easy to handle machines are built for daily use. The mower decks feature heavy duty spindles and bearings. Plus heat treated steel blades.

Finger-tip controls make your job easier. A special traction clutch lets you handle tricky terrain, and allows free wheeling in neutral. A convenient gear selector gives you one reverse and five forward speeds.

Other standard features include: easy 4-point height adjustment; only two belts; large wheels and tires; a special guard for easy trimming around trees; and large fuel tanks up to 3 gallons.



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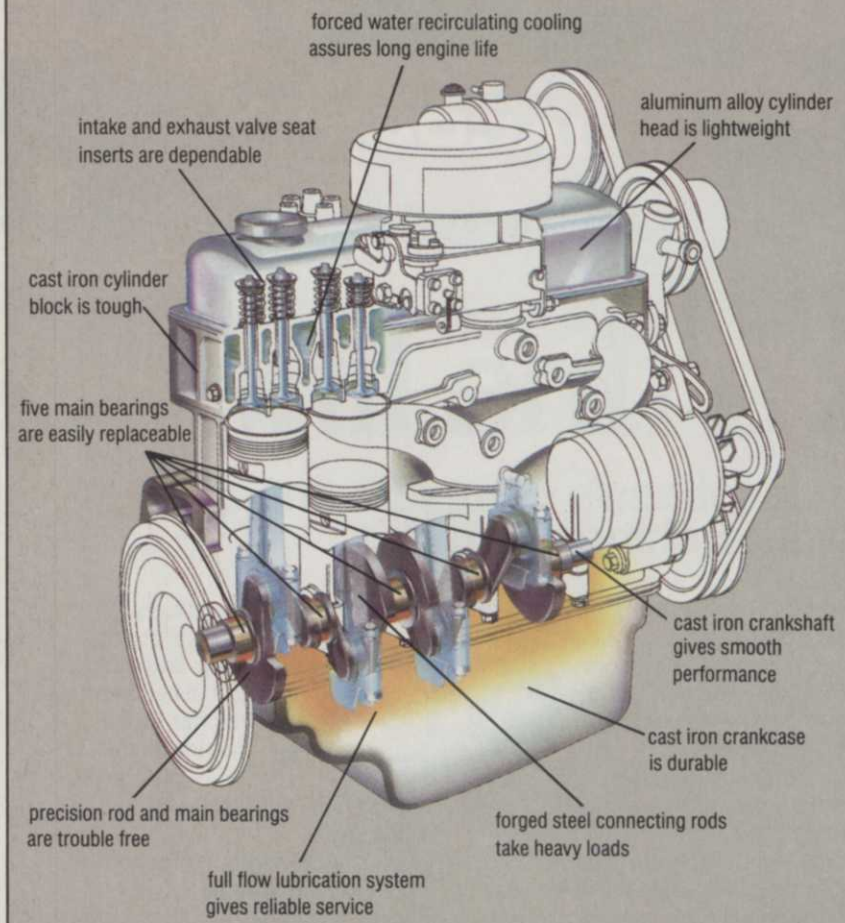

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R-11/14

Circle No. 158 on Reader Inquiry Card

Fiberglass rocks hide aerator floats

Barebo introduces Otter-Rock, a fiberglass accessory designed to simulate rocks, which covers the aerator floats.

The cover gives the impression that the water spray sculpture is natural as it shoots from the aerator unit. An Otter-Rock holds up to six Fountain-Glo lights and will retrofit all aerators up to five hp manufactured

by Barebo.

Aerators control algae buildup and aquatic odors by circulating oxygen back into the water.

Circle No. 194 on Reader Inquiry Card

New Promark lift rotates full circle

The new Promark trailer-mounted aerial lift is powered by an 18-hp twin-cylinder engine that can be started at the bucket.

Rotation is a continuous 360 degrees, and the articulated arms pro-

vide more maneuverability than telescopic lifts. Controls at the base and in the bucket can be feathered to give variable speed operation. The lift is lightweight, stabilized, and easy to tow, says Promark.

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New Team prevents your weeds with all-season stamina. It's gentle on cool season turf grass, including bluegrass, ryegrass and other fairway grass species. And new Team pre-emergence herbicide consistently delivers better control, longer control for your crabgrass. It also provides head-to-head goosegrass control.

New Team spreads very easily. The clay carrier makes equipment calibration simpler and application more accurate. It also reduces dust problems.

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Refer to the Team label for proper application instructions.

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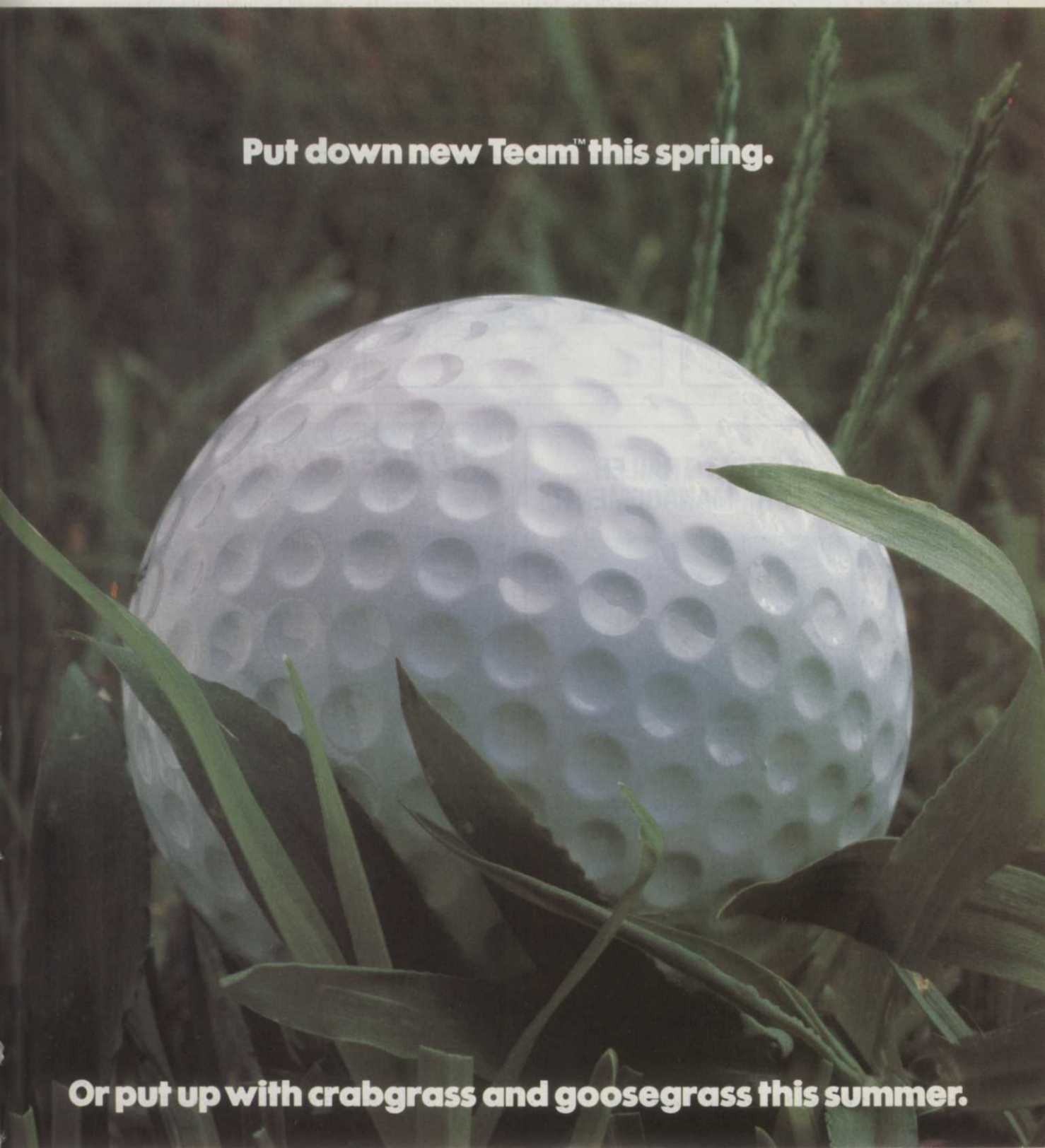
Put down new Team™ this spring.
Or put up with crabgrass and goosegrass this summer.

Oftanol registered for crane fly larvae

Oftanol 2 insecticide, a liquid organophosphate insecticide developed by Mobay Chemical Corp. for insects in turf, has received EPA registration for use against crane fly larvae.

A native of northern Europe, the crane fly is now a major insect problem in Washington and Oregon, and is moving south.

Tests conducted by Mobay have proved that one application of Oftanol 2 provides effective control of crane fly larvae at a rate of one gallon per acre.

Circle No. 196 on Reader Inquiry Card

Trailer allows dual purpose

Long/Run Trailers introduces its ATV-Special, a trailer designed to transport a three- or four-wheeler, and/or to be pulled off road by the ATV. It features a tilt bed, removable sides, and a two position tongue for level towing on- or off-road. Long/Run says it's a street legal trailer with semi-flotation tires, lights, and safety chain.

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Hydraulic attachment fits tractor rear

The Hydracutter is the newest hydraulically-powered attachment offered by Ingersoll equipment.

The Hydracutter, a 48-inch brushcutter, is designed for use behind the 14, 16 and 18 hp Ingersoll Hydriv garden tractors.

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ORTHENE offers blanket protection against an amazing variety of insect pests. It's cleared for use on a long list of trees and plants, from orchids to roses to ponderosa pine, even for turf. Cleared last year for use against turf insects, ORTHENE* has just been okayed for mole crickets in Florida—the main enemy of professionals' healthy greens and fairways.

By using ORTHENE, one spray lets you kill pests like tent caterpillars, whiteflies, Japanese beetles and thrips on contact. Plus it provides lasting residual action against other insects from aphids to scale crawlers to sod webworms. It's a great way to make the whole job of protecting flowers, trees and turf simpler, and more effective.

If you're a professional in the plant care industry, ORTHENE can actually make it easier to do a better job of protecting plants. You ought to know more about it. To find out, send in this coupon.

*ORTHENE 75 S Soluble Powder (Florida SLN).

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Please send me more information on ORTHENE.

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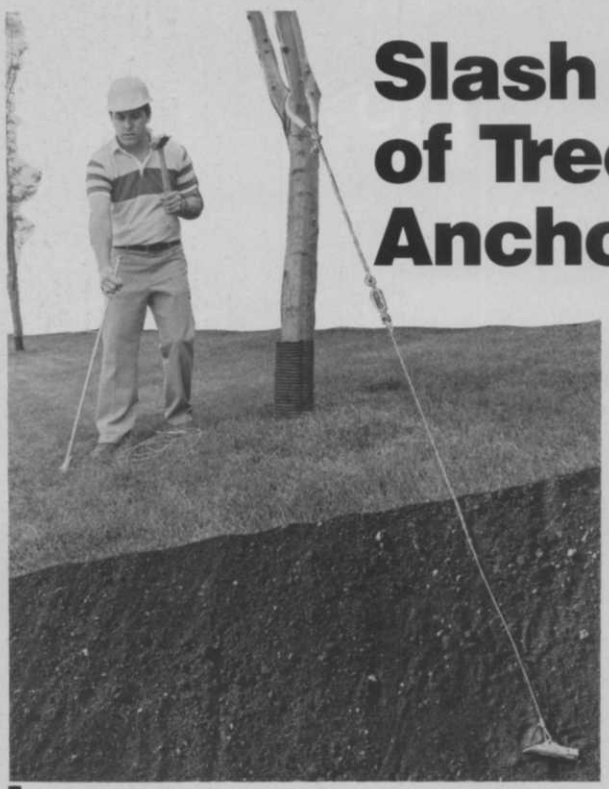


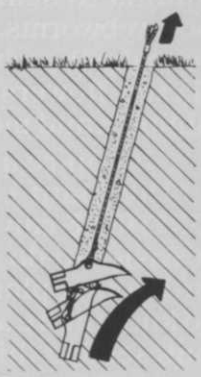
Slash Costs of Tree Anchoring!

New Duckbill Total System Tree Anchor Installed in Seconds by One Man

The Duckbill Total System Tree Anchor, a completely pre-assembled tree support for trees up to 6 inches in diameter, is available in two models. Model 40, which holds 300 lbs. in normal soil and anchors trees up to 3 inches in diameter, consists of the anchor with 12 feet of galvanized steel cable attached, a tree collar and a 1/16 inch cable clamp. Model 68, which holds 1100 lbs. in normal soil and anchors trees up to 6 inches in diameter consists of the anchor with 13 feet of galvanized steel cable attached, a tree collar and a 1/8 inch cable clamp. Both models are available 3 in a kit or in bulk. A kit of three anchors one tree.

Because it is pre-assembled, the Total System Duckbill Tree Anchor can be installed in seconds by untrained labor. Several trees can be anchored in the time it takes to anchor one tree by conventional methods.

Duckbill is driven into the ground with a drive rod and heavy hammer. An upward pull on the cable rotates the anchor into load lock position, like a toggle bolt in undisturbed earth.



Safe! Strong! Permanent!

Duckbill Anchors are available in different models with holding capacities from 300 to 20,000 lbs. They are the safest anchor you can use because no rigid rods are left above ground to injure people or damage motorized equipment. Once in the ground, Duckbill **stays** in the ground. When anchoring is no longer needed, simply cut cables at ground level, leaving no sign anchors were used. For complete information and your nearest supplier call or write today. Foresight Products Inc., 10780 Irma Drive, Unit 22, Northglenn, Colorado 80233. Phone 1-800-325-5360 or (303) 457-0222 in Colorado.

FORESIGHT® PRODUCTS INC.

Circle No. 127 on Reader Inquiry Card

gauge wheels permit easy backing and maneuvering

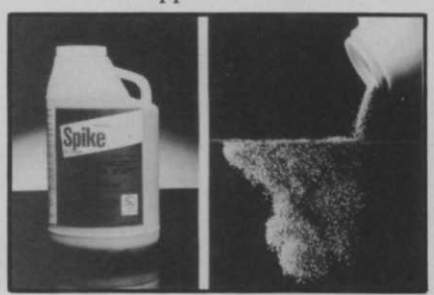
-Built-in, pre-loaded belt tensioning system.

Circle No. 198 on Reader Inquiry Card

Herbicide controls brush problems

Spike DF, marketed by Elanco Products, controls brush and weeds which choke fence rows and ditch banks. Spike DF is a dry, flowable herbicide which mixes easily with water for spraying areas where brush is a problem.

Spike can be applied at any time of the year, except when the ground is frozen. One application controls mul-



tiflora rose, briars and a variety of woody and herbaceous plants. Livestock can graze in areas where Spike is used, according to label directions.

Sprayers and spreaders for applying Spike are available free from Elanco Products through a promotional program directed toward end users and dealers. Spike is also available in pellet form in a dispensable container.

Circle No. 203 on Reader Inquiry Card

Wide-boom spreader cuts fertilizer costs

The Airjet pneumatic fertilizer spreader is said to improve spreading efficiency and cut costs by almost eliminating frequent boom-instability problems. The spreader, which comes from Britain, boasts boom widths of 53, 60 and 66 feet.

The manufacturer, along with Britain's National Institute of Agricultural Engineering, developed an innovative boom-suspension system which gives the spreader its superior performance. The boom remains parallel to the ground, even when working on slopes, and the suspension system suppresses the bounce, sway and yaw movements which cause erratic spreading. Also, it protects the boom structure against potentially damaging vibrations and shock loads transmitted through the tractor mounting.

Start getting better quality turf... from the ground up.

Country Club & Greenskeeper Turf Products

Unique homogenous granules mean even element distribution.

Every particle of Country Club & Greenskeeper fertilizer contains a balanced combination of N-P-K. So no matter what sizing or coverage your turf requires, each plant comes in contact with every important element for consistent quality growth and extended feeding.

Your turf grows beautifully... and economically, too.

Because **Lebanon** products are homogenous and contain the right balance of insoluble and soluble nitrogen, you get even element distribution for quick green-up as well as long range feeding. The result? You'll see significant savings grow along with a lush, green turf.

There's no turf too tough for Lebanon products.

We have more than three dozen standard fertilizer, sulphur-coated urea blends, and fertilizer/chemical control products to solve just about any turf problem. But soil conditions vary. So if your soil has special needs, we'll be happy to put our more than 35 years' experience to work to meet those needs. We can formulate an exclusive blend for you that will coax greener turf from your soil.

Better service from the ground up, too.

From custom-designed turf care programs to a solid nationwide network of distributors, **Lebanon** can assure you of knowledgeable, prompt service. And an entire range of proven top performance products developed to help your turf look its best where it counts. From the ground up.

Call us today...and let us give you what you need.

We'll send you a free copy of our agronomy manual at no obligation. And we'll tell you how we can start giving you better quality turf from the ground up. Call our **Greenline** today at 1-800-233-0628; in Pennsylvania, 717-273-1687.

The GREENLINE

Lebanon
TOTAL TURF CARE

A division of Lebanon Chemical Corporation
P.O. Box 180 • Lebanon, PA 17042

Circle No. 136 on Reader Inquiry Card

The spreader has a 286-gallon capacity hooper which holds more than a ton of granular fertilizer. The machine also spreads micrograniular chemicals and seeds.

Circle No. 204 on Reader Inquiry Card

Direct lawn applicator eliminates overspray

A unique roller arrangement in Danville Industries' new express direct lawn applicators puts chemicals only where you want them. Liquid fertilizer or weed killer can be spread evenly and directly without overspray possibly harming nearby gardens or shrubs.

Two express models are available. The hand model has a 30-inch roller and four-gallon polyethylene tank, and the pull-behind applicator has roller widths ranging from 36 to 48 inches with a 12-gallon chemical tank.

The pull behind attatches to any lawn tractor or three-wheel vehicle.

The direct-lawn applicators are designed for use at home, business or institutions.

Circle No. 205 on Reader Inquiry Card

Core cultivator has new re-styled engine

The newest model of the Ryan Greensaire II core cultivator features a streamlined 8-hp Kohler engine.

The engine has a five-quart gas tank for 25 percent more fuel capacity than previous models. The oil dipstick is on top of the engine for easier access. And, instead of a separate stop switch, there is a "stop" position on the throttle.

The self-propelled Greensaire II can cover up to 6,900 sq. feet per hour with a 24-inch swath and two-inch coring pattern that removes 36 cores per square foot.

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MT3000™ SPRAYER CONTROL

Only $895.00

The MT3000 pays for itself many times over by eliminating costly over and under applying of herbicides, pesticides and liquid fertilizer. Simply select your desired rate of chemical application and the MT3000 will maintain that rate regardless of speed or boom control change. Take the guess work and waste from your spray program and watch the savings go in your pocket.

Also from Micro-Trak:

Provides direct measurement of speed, application rate, total liquid applied, area worked and distance.

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SPRAYER MONITOR

Mfd. in U.S.A. by:

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UTILITY VEHICLE

- Model 4: 3 wheels
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- Strongest utility vehicle built
- 7 major automotive components

SPECIAL $4,495 PRICE FOR 3 MONTHS ONLY!
Orders must be received by April 30, 1986.
Contact your local distributor or call direct.

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(213) 426-9376

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QUALITY WORK AT OUR END MEANS QUALITY WORK AT YOURS.

The Melroe Company insists on maintaining the highest standards of quality in design and manufacturing in their versatile Bobcat loader line. Like groundskeepers and landscapers, we demand high quality materials and workmanship, and that goes into every machine we build. Even with those stringent requirements, we supply you with a top quality loader at a competitive price.

That quality is reflected in ever-increasing demands for Bobcat loaders and attachments by groundskeepers and landscapers in every segment of the landscape and grounds maintenance industry. Bobcat durability, ease of operation and maintenance, comfort and safety, parts and service reliability, and a strong dealer support network, give you job performance that can't be equaled by any other loader.

The Melroe Company's dedication to building quality machines is your assurance of value and performance. Landscapers and groundskeepers have learned to rely on Bobcat quality to help build their own business on that same reputation.

Quality work – we're in it together!

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A BUSINESS UNIT OF CLARK EQUIPMENT COMPANY

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bobcat®

Circle No. 170 on Reader Inquiry Card

CLASSIFIEDS

RATES: $1.00 per word (minimum charge, $25). Bold face words or words in all capital letters charged at $1.25 per word. Boxed or display ads: $85 per column inch-1x (one inch minimum); $80-3x; $75-6x; $70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $5 to total cost of ad. Send ad copy with payment to Dawn Nilsen, WEEDS TREES & TURF, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

BOX NUMBER REPLIES: Mail box number replies to: WEEDS TREES & TURF, Classified Ad Department, 120 W. 2nd St., Duluth, MN 55802. Please include box number in address.

BUSINESS OPPORTUNITIES

WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

Franchise Opportunity: Industrial Vegetation Control- Box 3187- Enid, OK 73702. Small investment-Large Return. Kem Weed Trademark. 2/86

Wanted: Landscape maintenance, tree maintenance, chemical lawn care accounts, equipment, etc. Boston, MA & surrounding areas. Reply to: Landscape Maint., 7 Chute Street, Reading, MA 01867 5/86

Help Wanted

HELP WANTED—Fine Grade Box Operator—Expanding landscape firm in Northern Virginia area seeks knowledgeable individuals for permanent position. Salary commensurate with experience; many benefits plus bonus opportunities. Send resume with complete background experience to: S. Burton & Co., Inc., P.O. Box 147, Hartwood, Virginia 22471. 3/86

LANDSCAPE MAINTENANCE & CONSTRUCTION: Challenging year-round position in large development in the Mountains of Virginia. This landscape superintendent with at least 5 years experience will work with planting plans, lead a crew of men in all phases of landscaping. Budgeting and planning skills required. Send resume to WTT Box 379. 2/86

Landscape Construction And Maintenance: Tired Of Long, Cold Winters? Award Winning Company In Atlanta Seeks Experience And Dedication. Full Benefits And Top Pay For A Twelve Month Season. Send Letter And Resume To Convey Your Interest. Gibbs Landscape Co. (Formerly Greenbrothers), 4111 Burge Road, Smyrna, Georgia 30080. 2/86

Tree and shrub specialist Chemlawn Services Corporation/ Are you an ambitious person who is willing to take risks in a company growing at a 25% yearly rate, a company who has promoted 150 managers last year, a company which is the recognized leader in its industry? If so, you may qualify for an opportunity to join the Schaumburg, Illinois branch. Responsibilities will include sales and servicing our customers. This outstanding ground floor opportunity offers a salary, fringe benefits, continual job training and unlimited challenge. To find out more about this career opportunity, please write or call **Chemlawn Services Corporation, 1103 W. Morse Ave., Schaumburg, IL 60193, 312-529-4200.** 3/86

Seeking independent sales representatives to sell grass seed. Territories available in California, Utah, Colorado, New Mexico, and Arizona. Call Agrono-Tec- (619) 480-9382. 2/86

Supervisors (project foremen) join a nationally acclaimed firm looking to expand into its second generation. Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to, **GOLDBERG & RODLER, INC.,** 216 East Main Street, Huntington, New York 11743. 2/86

LAWN MEDIC. SERVICE TECHNICIAN: Full time positions, year round employment. Lawn care experience preferred. Competitive salary and fringe benefits. Call 1-3 p.m. (919) 724-7075 or NC only 1-800-822-3224, or send resume: P.O. Box 769, Kernersville, NC 27285. 3/86

LANDSCAPE MAINTENANCE AND CONSTRUCTION SUPERVISORS: Rochester, N.Y. Responsibilities include production and sales - Commercial/Residential. Excellent career opportunities for responsible, ambitious, and self motivated individual. Send qualifications and employment history to: P.O. Box 92, Webster, NY 14580. 3/86

Career Opportunities: A leader in the Wholesale Nursery Industry operating two major growing facilities and five re-wholesale yards through-out the northeast has openings for qualified Supervisor-Trainees through our on-going recruitment program. If you enjoy a growth climate and have the attitude and skills to join a major company, we have a place for you. Send resume to or call Jim Fleming at: **The Robert Baker Companies,** 1700 Mountain Road, West Suffield, CT 06093. 203-668-7371. 2/86

Landscape Construction Manager - Established maintenance company seeking individual with broad experience to develop a design/build division to compliment existing operations. This individual should have a solid sales, estimating, design and construction background, and a stable, verifiable work history. Send resume and requirements to Landscape Care Co., 4026 Pacheco Blvd., Martinez, CA 94553. 3/86

HEAD GOLF COURSE MECHANIC—Large company seeking an enthusiastic and knowledgeable person to take charge of a well equipped maintenance facility. Golf Course experience preferable, with background in fabrication and shop supervision. Excellent salary, benefits and opportunities available. Send resume to: Club Manager/Superintendent, Jacaranda Country Club, 9200 W. Broward Blvd., Plantation, Florida 33324. 2/86

SPRINKLER SYSTEM INSTALLER- Established Colorado landscaping firm needs individual with 3-5 years experience in design, layout and installation. Good salary and benefits. Write WTT Box 381. 3/86

Tree and Shrub Care. America's fastest growing tree and shrub company seeking experienced, aggressive Horticulturist's for existing and expansion markets. Experience, degree and motivation key ingredients. Tremendous advance opportunities. Excellent salary, benefits. All inquiries will be strictly confidential. Send resume, salary history to: William Scott Carr, Tru Green Tree and Shrub Care, 8324 Shaver Road, Kalamazoo, MI 49002. Expand your potential with an industry leader. 4/86

TRY THIS WITH ANY OTHER

Others do their level best to convince you that a flashy-looking riding mower is just what you need.

But for all those times when "level best" isn't good enough, consider a 68" or 84" Triplex from National.

They're engineered with ground-hugging stability that lets you cruise over virtually any terrain. And even a beginner gets professional results because the Triplex's three floating reels reach out over crowns or curbs without ever scalping.

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Office Management Personnel needed.
Residential Work Only,
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LANDSCAPE MAINTENANCE SALES—Positions available in sales with one of Dallas/Fort Worth's leading landscape maintenance companies. Respondents must have experience in landscape maintenance or related field and comprehensive sales background. We're looking for personable, ambitious and self-motivated people. Please send resume with salary requirements in care of WTT Box 350. 2/86

LANDSCAPE MAINTENANCE FIELD SUPERVISOR—Great opportunity available with large, quickly expanding firm in Dallas area. Must have landscape experience and technical knowledge in order to qualify. Excellent salary plus benefits and bonus incentive programs. Send resume describing pertinent experience and salary requirements in care of WTT Box 353. 2/86

SOD FARM MANAGER: 500 acre Chicago-area operation seeks qualified manager. Involves production, irrigation, and harvesting. Excellent salary and benefits. Send resume to WTT Box 354. 2/86

Management Trainee - ServiceMaster LawnCare - We are a multinational service company looking for people to train for management positions in our rapidly expanding franchise operation. We need people with good communication skills, customer service orientation, and willingness to relocate. We offer compensation based on ability and productivity, complete benefit package, and the opportunity to grow with the number one service company of the Fortune 500. Please respond with resume, salary history and requirements to: ServiceMaster Industries, LawnCare Division, 2300 Warrenville Road, Downers Grove, IL 60515. T/F

FOR SALE

For Sale: 900 acres sod, mint and vegetable farm, will split $900 per A. 7 gang Roseman sharpened, $1350. Ryan Sod cutter with Ryder, $1350. 414-326-5267. 3/86

LIGHTED PAR 3 GOLF COURSE - 15 ACTIVITY RECREATION FACILITY AND 3 COMMERCIAL BLDGS. Central indiana Box 205, Mt. Summit, IN 47361. 317-284-1459. 2/86

TRANSPLANT YOUR OWN TREES: Vermeer TS 30 Trailer mounted tree spade. Mint condition. Ideal for golf course or large development. Only 2 years old. Was $11,000.00 new. Will sacrifice for $7,500.00 or trade for used Spyder forklift. Call 414-434-9496. 2/86

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USED-RECONDITIONED-NEW

Brush Chippers, Tree & Turf Sprayers
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LAWN COMBINE—aerate, seed, fertilize, spray, etc; **RYAN DETHATCHER; INTERNATIONAL 1450 TRACTOR** with aerator and spray systems. Call 607-754-3137. 2/86

BROWER — 7 Gang PTO mower and new parts. Low use, good condition. $5,500. **FOLEY** — 388 reel sharpener, like new, $1,500. (405) 771-5122. P.O. Box 424, Spencer, OK 73084. 2/86

2 Brouwer Harvesters, For 3600, 18" rolling GM Turf Equip. 303-535-4317. 2/86

TREE SPRAYING ROUTE: Western Suffolk, Long Island. 1982 Bean 600 Gal. SS. Tank - 50 G.P.M. Pump-Electric reel. 1972 GMC 5500 - 250 Accounts - All contracted. Nets - $25,000 for 4 months. Call (516) 499-8050. 2/86

BOWIE HYDRO-MULCHERS AND STRAW BLOWERS. New and used. Landscape Supply, Ltd., P.O. Box 22092, Greensboro, NC 27420. (919) 292-2922. 5/86

Hybrid Poplar Trees: Rapid growth - up to 10 feet first year! Excellent as landscaping, screen, shade, or specimen tree. Ideal border plantings. Inquiries promptly answered. Free catalog. Insti-Trees Nursery, Box 1370, Dept. WT, Rhinelander, WI 54501. 715-282-5247. 2/86

FOR SALE: 1980 7700 FORD TRACTOR WITH 83 MOTT 88" REVERSE FINE CUT FLAIL MOWER. 63 HOBBS 40FT PLATFORM TRAILER. CALL 817/365-9904 OR 214/248-0557 RT. 1, BOX 15 AUBREY, TEXAS 76227. 2/86

FOR SALE: Two 1978 GMC 1 Ton units with 600 gal. tanks, Hypro diaphram pumps and Hannay reels. Good condition. $7,500 each. (315) 637-5175.

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SPRAY TRUCKS 1980 GMC: Series 6000 350 V8 4 speed and 2 speed axel. Units are equipped with 1200 gal. Tuflex fiber glass tanks, mechanical agitation, 10 GPM Bean pump, 50 gal. side tank, 8 hp. Kohlar engine drive, Haney electric hose reel and detachable 1200 lb. capacity granular fertilizer box. $10,500.00. Call Bob MacPherson, 1-312-293-1036. 2/86

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TREE FERTILIZATION GUN, tested on over a million square feet of trees and shrubs all over the U.S. Good to 500 psi, repairable, non-corrosive. Buy direct from manufacturer, $106.00. (shipping included). Arbor-Nomics, Inc., 5634-A Buford Highway, Atlanta, Georgia 30071. (404) 447-6037. TF

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Spraying Service (Trees & Turf). Excellent reputation, high potential. 47 years, one-man operation. 2 modern truck and sprayers, Owner retiring-details write WTT Box 380. 2/86

BROUWER HARVESTER OWNERS! ELECTRIC DEPTH CONTROL. Save time and money with improved quality control. Make depth-of-cut adjustments, on the move, with one button finger tip control. Allows you to cut longer rows through varying soil conditions. $795.00. 30-day satisfaction guarantee and full-year warranty. Write or call: Shattuck Turf Equipment, 1872 N.W. 82nd, Des Moines, IA 50322, (515)278-5255. Patent pending. 3/86

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USED EQUIPMENT

USED TRUCKS: 2-1976 International Loadstar - 1200 Gal. Stainless Steel Tank, Meyers 3 Piston Pump, Dual Reels. 1-1976 G.M.C. 60 Series - 1200 Gal. Mild Steel Tank, Bean 4 Piston Pump, Single Reel. On line daily. $4,000.00 each or all 3 trucks for $10,000.00 cash. Phone 702-361-5095. 2/86

FOR SALE—Spray truck 1980 1200 Gallon Lawn spray tank, PTO driven Bean Pump with 2 hose reels and mechanical agitation on 1976 Ford F600. Good condition - $6500. Pittsburgh, PA 412-366-2452. 2/86

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1979 TORO HTM 175. 7 gang hydraulic fairway mower, diesel. Only 3 northern seasons, 1,200 hours, reels groun , sharp, ready to go. $22,000 or offer. (313)855-0700. 2/86

NEW, USED AND RECONDITIONED SPYDER FORKLIFTS ALL IN GOOD CONDITION. THOMAS BROS., GRASS, ARLINGTON, TX 817-261-7346. 2/86

1978 Bean Sprayer, towable; DO35E/400S, 400 gal., stainless steel, 23hp Koehler, 35 gpm-700psi, drawbar, tandem axles, brakes, fenders, D.O.T. lights, Hannay Reel, 200' ¾" hose, 785 gun, 2" filler hose. Garaged, excellent cond. $7,000.00 complete or $6,000.00 sprayer only. (215) 691-6310. 2/86

WANTED

SELLING A GOLF COURSE? Qualified Buyer Seeking to Acquire Top Sunbelt Course. Call Rob Landham- (615) 842-4646. 2/86

WANTED-Used Jacobsen Blitzer mowers with frames. Call Cranmer Grass Farm, Inc.—316-722-7230.

Wanted to buy **HYDRO SEEDER**. Please send photo. Johnson Hydro Seeding Corp., 13751 Travilah Road, Rockville, MD 20850, 301/340-0805. TF

WANTED: Large Lindig and Royer Shredders. Lewis Equipment, 320 Third Street S.W., Winter Haven, FL 33880. (813)294-5893.

POSITION WANTED

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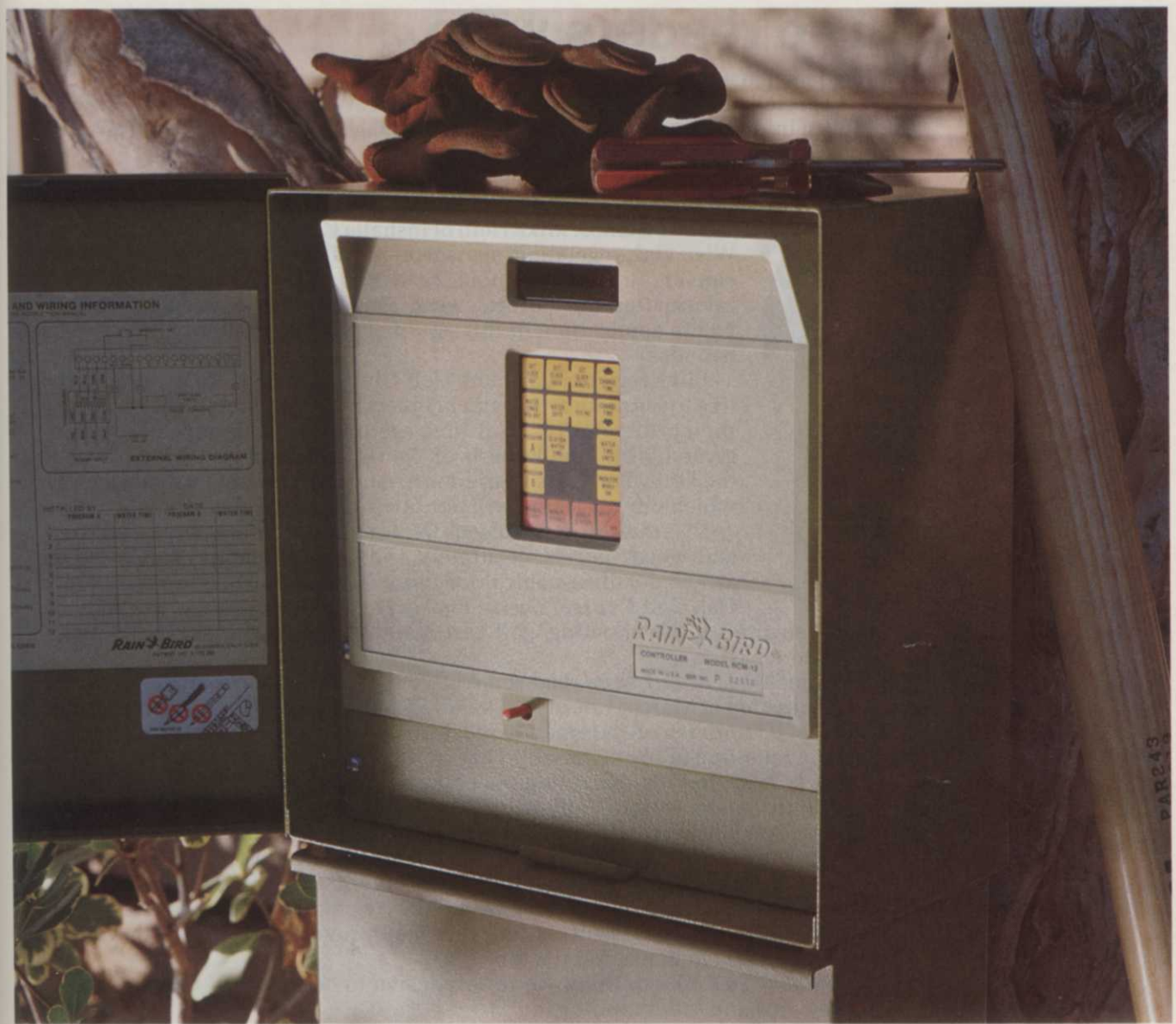

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The readers write...

Readers. I just love 'em.

Especially the readers of WEEDS TREES & TURF. Why? Because you know what kind of information you need from your trade magazines, and you're not afraid to speak up.

In the past 12 months, we've received hundreds of Reader Feedback Cards, which help us plan our editorial calendar.

For instance, Mike Hein of Inshalla Country Club in Tomahawk, Wis., and vegetation management officer Rene Roddick of Vancouver, British Columbia, both had the same idea. They want information on cultural weed management alternatives to herbicide application. In this age of chemical sensitivity, that's not a bad idea.

Bill Kreiger of Larimore Golf Club, Larimore, N.D., tells us, "I'd like to see more articles on blankets to protect greens over winter in the north country." Not long ago, this was the topic of a speech given by Dr. John Roberts of the University of New Hampshire at the Ohio Turfgrass Conference. And it's a fascinating subject, one which our magazine will doubtless deal with this fall.

J. Garfinkle of Great Neck, N.Y., suggests "more photos for insect and weed species, accurately and clearly defining parts, and an article detailing control for those species." Mike Martin of Water Oak Golf Course, Eustis, Fla., says "I'd like to see more articles on small engine trouble-shooting, golf cart maintenance, and trouble-shooting." Not bad ideas.

"Sometimes after I have read some of your more technical articles," writes Mike Breeden of Mercer County Elks Golf Course, Celina, Ohio, "I wonder how much of it I understood or remembered. I would like to see an occasional quiz to test my retention of the material." That would be a radical departure for WEEDS TREES & TURF, but it's something the editors can discuss.

Unfortunately, we can't follow up on some ideas—even terrific ones. Robert Presgrave, a lawn care operator in Fairfax, Va., has a good one that we'd love to try. But it would be too expensive to implement. "I'd like to see more test-report articles on tractors, mowers, and chain saws," Presgrave writes. "Over the years, I've read articles in car magazines where they would run tests on a certain car and then report their results. I feel this may prove interesting with various equipment attachments and tractors."

We at WT&T like to think we're responsive to our readers' needs. So keep those cards and letters rolling in.

Ah, readers. I just love 'em.

Jerry Roche

Jerry Roche, editor

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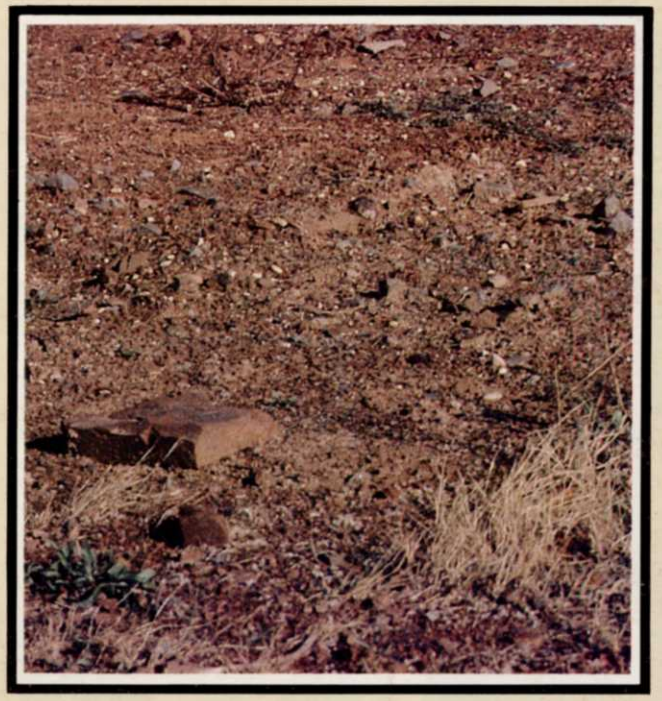

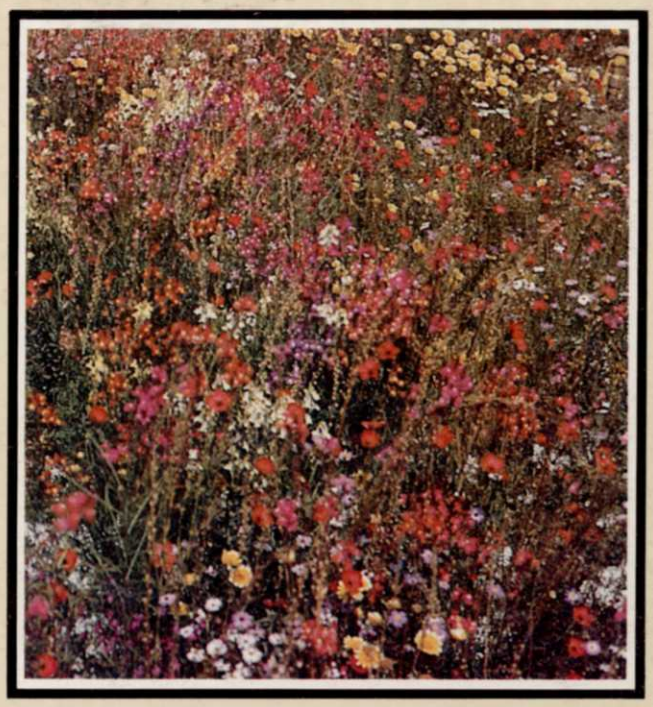

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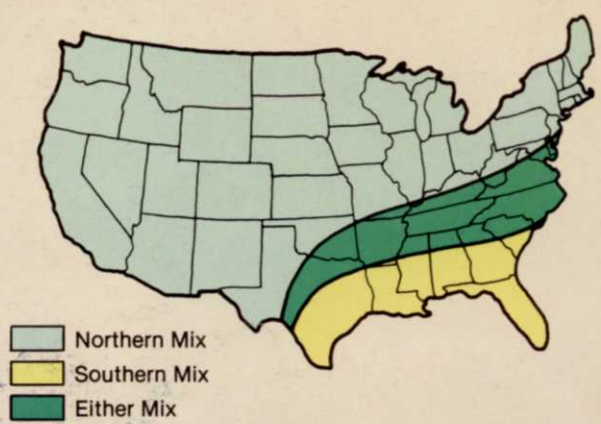

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